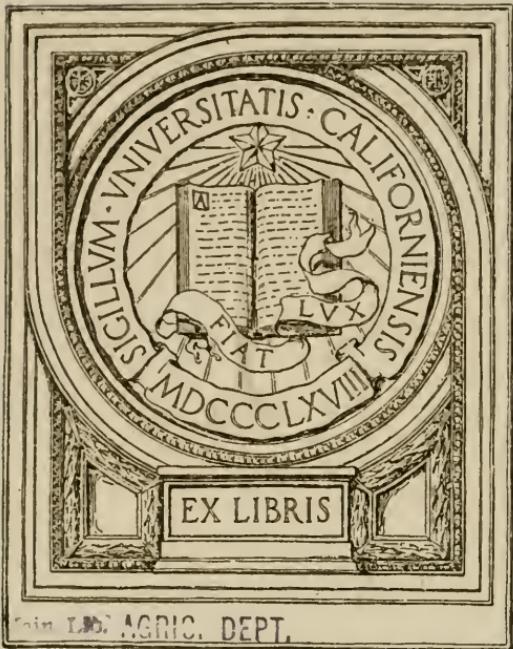


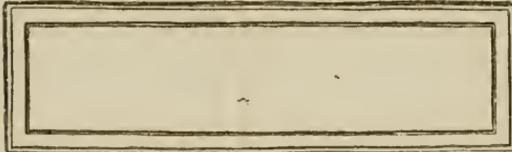
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OFFICIAL REPORT
OF THE
SECOND INTERNATIONAL
COTTON CONGRESS

HELD

JUNE 5th to 9th, 1905

MANCHESTER AND LIVERPOOL

[ISSUED UNDER THE DIRECTION OF THE INTERNATIONAL COMMITTEE
APPOINTED BY THE CONGRESS.]

MANCHESTER:
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OFFICIAL REPORT
OF THE PROCEEDINGS OF
THE SECOND
INTERNATIONAL CONGRESS
OF DELEGATED REPRESENTATIVES OF
MASTER COTTON SPINNERS'
AND
MANUFACTURERS' ASSOCIATIONS

HELD IN THE
TOWN HALL, MANCHESTER,
ON
JUNE 5TH, 6TH, 7TH AND 9TH, 1905,
(*By invitation of*
The Right Honourable the Lord Mayor of Manchester and the Corporation of
The City of Manchester).

AND IN THE
TOWN HALL, LIVERPOOL,
ON JUNE 8TH,

(*By invitation of The Right Honourable the Lord Mayor of Liverpool and*
The Corporation of the City of Liverpool).

[ISSUED UNDER THE DIRECTION OF THE INTERNATIONAL
COMMITTEE APPOINTED BY THE CONGRESS.]

70 (1971)
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IN presenting the Report of the Second International Congress of delegated representatives of Master Cotton Spinners' and Manufacturers' Associations, which was held in Manchester and Liverpool from June 5th to 9th, the International Committee has much pleasure in stating that the Organisation has now been placed on a sound and satisfactory basis.

Regulations and Bye-laws providing for the efficient working of the International Federation were unanimously adopted at the Congress, and a Secretary, with a thorough knowledge of the three official languages, and who will devote the whole of his time to the work of the International Federation, was appointed.

Steps are being taken to complete the affiliation with the International Federation, of the Associations in all Cotton Spinning and Manufacturing countries, and it is hoped that the few now unconnected with it will speedily declare their adhesion, the interests of Cotton Spinners and Manufacturers, in all countries, with regard to the supply of the raw material and in connection with many other matters being identical.

The International Committee will spare no efforts in their endeavour to safeguard the interests of the Cotton Industry of the world.

INTERNATIONAL COMMITTEE.

1905-6.

C. W. MACARA (England), CHAIRMAN.

JOHN SYZ (Switzerland), VICE-CHAIRMAN.

CASIMIR BERGER (France) }
FERD. GROSS (Germany) } HON. TREASURERS.

A. KUFFLER (Austria).

JEAN DE HEMPTINNE (Belgium).

HENRY HIGSON (England).

BARON COSTANZO CANTONI (Italy).

H. P. TAVEIRA (Portugal).

E. CALVET (Spain).

Hon. Secretary:

JOHN SMETHURST, MANCHESTER.

Secretary:

ARNO SCHMIDT.

Private Secretary to the Chairman:

CHAS. DAVIDSON.

Auditors:DAVID SMITH, GARNETT & CO.,
Chartered Accountants, 22, Booth Street, Manchester.**Bankers:**

THE LANCASHIRE & YORKSHIRE BANK LTD., MANCHESTER.

Offices: 22, ST. MARY'S GATE, MANCHESTER.*Telegraphic Address:* "INVITE," MANCHESTER. *Nat. Telephone:* 4247.

List of Delegated Representatives.

Association Cotonnière de Belgique.

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JEAN DE HEMPTINNE, President	MAURICE DE SMET DE NOEYER
	JEAN VOORTMAN

Association Belge de Tissage.

FERDINAND DE SMET DE NOEYER

Associação Industrial Portugueza.

H. P. TAVEIRA, President

Associação Industrial Portuense.

LUIZ F. d'OLIVEIRA	HONORÉ VAVASSEUR
--------------------	------------------

Associazione tra gli Industriali Cotonieri e Borsa Cotonì.

BARON COSTANZO CANTONI, President

Bolton Master Cotton Spinners' Association.

JOHN CHARNOCK	A. E. RAHR.
A. HILL, Secretary	JAMES THORP
ROBERT LORD	WM. WALLWORK

British Cotton Growing Association.

J. C. ATKINS, Secretary	J. A. HUTTON, Vice-Chairman
	J. E. NEWTON, Chairman

Association Cotonnière Coloniale, Paris.

CASIMIR BERGER

Chorley Master Cotton Spinners' Association.

ALD. JAMES LAWRENCE.	SAMUEL WIDDOWS.
----------------------	-----------------

Kolonial-Wirtschaftliches Komitee (Berlin).

KOMMERZIENRAT FERD. GROSS

Elsässisches Industrielles Syndicat.

RENÉ KULLMANN	ARNOLD SEYRIG
---------------	---------------

The Federation of Master Cotton Spinners' Associations.

J. R. BYROM	C. W. MACARA, President
J. T. DAWSON	S. NEWTON
A. DEARNALEY	J. SMETHURST, Secretary
J. DERBYSHIRE	E. STANSFIELD
F. HARDERN	J. B. TATTERSALL, Vice-President
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H. W. MACALISTER	E. TRAVIS

Fomento del Trabajo Nacional (Barcelona).

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Nederlandsche Cotton-Growing Association.

R. A. DE MONCHY, JR., Secretary.

North and North East Lancashire Cotton Spinners' and Manufacturers' Association.

A. BIRTWISTLE	T. ROBERTS
F. A. HARGREAVES, Secretary	J. R. SMITH
H. HIGSON, President	J. TAYLOR, Secretary

Schweizerischer Spinner-, ZWirner- und Weber-Verein.

CASPAR JENNY	ERNST LANG
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Syndicat Français de la Filature de Coton et du Tissage de Coton.**Syndicat Normand de la Filature de Coton:**

C. BERGER EUG. LAVOISIER ALEX. MABIRE

Syndicat Normand du Tissage de Coton:

FERD. ROY — GAILLARD

Syndicat Cotonnier de Bolbec-Lillebonne:

G. LEMAITRE M. LEMAITRE

Comité Français de la Filature de Coton (Groupe du Nord):

JULIEN LE BLAN	G. DUVILLIERS	ALB. MOTTE
	FERD. MOTTE	

Syndicat des Filiateurs et Retordeurs de Coton de Lille:

ALBERT DELESALLE	GEORGES CREPY
------------------	---------------

Union de l'Industrie Cotonnière de Roanne, Thizy et la région:

S. FAISANT

VICTOR DECHELETTE

JUSTIN VEILLAS

Verband Rheinisch-Westphälischer Baumwollspinner.

M. BRUGELMANN

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GEORG SCHWARTZ.

Verein der Baumwoll-Spinner Oesterreichs.

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GEH. KOMMERZIENRAT VOGEL

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A. ARNOLD

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OSCAR VON BIPPEN

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ALBERT TEN BRINK

RICH. KRANER

HARRY DUEWELL

C. KOPP

AUGUST FROMMEL

OTTO TESSMANN

KOMMERZIENRAT FERD. GROSS, President

ADOLF WAIBEL

New England Cotton Manufacturers' Association (America).*Represented by SAMUEL S. DALE**Interpreter: F. PRELLBERG**Chief Official Reporter: W. A. BALMFORTH**French Reporter: C. E. ROCHE**German Reporter: FRANK WAGNER*

OFFICIAL REPORT

OF THE PROCEEDINGS OF THE SECOND INTERNATIONAL CONGRESS
OF DELEGATED REPRESENTATIVES OF MASTER COTTON SPINNERS'
AND MANUFACTURERS' ASSOCIATIONS HELD IN MANCHESTER, ON
JUNE 5TH, 6TH, 7TH, AND 9TH, AND IN LIVERPOOL ON JUNE 8TH,
1905.

The proceedings began in the Lord Mayor's Parlour, Manchester Town Hall, on Monday, June 5th.

THE LORD MAYOR OF MANCHESTER (The Right Honourable T. Thornhill Shann) accorded to the Delegates a very hearty welcome to the City of Manchester, and expressed the hope that the deliberations of the Congress would be highly beneficial to the cotton industry; and in view of the prominence of that industry in the world's commercial relations, would also help materially in promoting peace and goodwill amongst the people of all nations.

Mr. A. H. DIXON, acting for Mr. E. Tootal Broadhurst, Chairman of the Reception Committee, who was unable to be present owing to illness, introduced the President, Mr. C. W. Macara, to the Lord Mayor, and in doing so expressed, on behalf of that Committee, the great pleasure they all felt in bidding a cordial welcome to the Delegates, especially to those who had come from the Continent.

Mr. C. W. MACARA then presented the members of the International Committee to the Lord Mayor.

On taking his seat as President of the Congress, Mr. MACARA said he was sure everyone present felt deeply grateful to the Chief Magistrate of that great municipality for the cordial welcome extended to the Delegates assembled to take part in the Second International Congress.

He then referred to the negotiations which led to the acceptance by the International Committee of the Lord Mayor's offer to arrange for the Congress in Manchester; and proceeded: Before we begin the work of the Congress I must refer to the great loss sustained by the International Federation in the death of M. GEORGES MOTTE, President of the French Cotton Spinners' Federation. M. Motte took

a leading part in the first Congress in Zurich, and made a lasting impression upon all those with whom he then came in contact. I have also to refer to the death of Mr. SAMUEL SMETHURST, who was also present at our first Congress. Mr. Smethurst was most highly esteemed by employers and operatives in the cotton trade of Lancashire, and we shall miss him very keenly at this Congress.

The International movement has grown since we last met, and Spain is now added to the number of countries originally represented. I shall ask Señor Calvet, the Spanish representative, to address you shortly. We have also present a gentleman from the Netherlands, and we shall have a representative from America. The visit of these two gentlemen will, I hope, result in the two great Federations in the United States of America and the Associations in the Netherlands becoming affiliated to the International Cotton Federation.

With your permission I will now read the address which, as President, I have prepared for this opening meeting:—

The recent crisis in the cotton industry brought about by the shortage of raw material and the consequent excessive speculation, has been productive of results which probably will have a most important bearing upon the future of the industry as a whole.

Much information regarding this great industry has been widely disseminated, but notwithstanding this there is still a certain amount of misapprehension with regard to the ever-changing conditions under which it is carried on.

Those who have followed closely the working of the industry as a whole are more and more convinced that while individual employers may continue, as in the past, to regulate the details in connection with the management of their own businesses, there are now forces at work which have to be reckoned with, and which can only be dealt with successfully by associations of employers. These forces have, during recent years, gradually become more powerful, and it is therefore necessary to have federations of associations in various cotton-using countries, and recent events have proved that International Federation has become a necessity if the interests of the industry as a whole are to be adequately safeguarded.

The annual average price of the cotton crop of the world has varied during the past ten years from under 4d. to as high as 7d. per lb., but taking an average of 5d. per lb., and estimating the annual crop of the world at 16,000,000 bales of 500 lbs. each, the value of the raw material would amount to £160,000,000. In England, where the cotton industry is more highly specialised than elsewhere, the cost of

converting the raw material, when at an average of 5d. per lb., into finished fabrics is over one-and-a-half times the original cost, so that although less may be spent by other countries in manipulating the raw material, the annual value of the fabrics produced from cotton must be about £350,000,000. Such figures prove what an enormous factor the cotton industry is in clothing the inhabitants of the world. How many people are employed in the cultivation of the raw material, and in the numerous processes through which it passes before it is converted into clothing, it is impossible even approximately to estimate. In addition, there is the influence an industry of such dimensions exercises, not only upon all other industries and on the value of property generally, but also the employment it gives to the mercantile and banking interests, and to carriers of all kinds both by land and sea.

Although international federation of the associations of master cotton spinners had been repeatedly discussed at meetings of the general committee of the English Master Cotton Spinners' Federation, during the severe crisis through which the industry has passed recently, it was not until the 16th December, 1903, that definite action was taken to bring it about. It was felt by those who had undertaken the organisation of the English cotton spinning industry, that the difficulties encountered had been so great that, until all the English organisations of master cotton spinners were united in one federation, it would be unwise to embark on an enterprise of such gigantic proportions as international federation. In this connection, it is pleasing to be able to state that, since the Zurich International Congress was held, the Bolton Master Cotton Spinners' Association, which embraces the Fine Cotton Spinners' and Doublers' Association, has decided to become affiliated, on July 1st, with the Federation of Master Cotton Spinners' Associations, which will then embrace nearly one-third of the cotton spindles of the world. The only associations of cotton spinners in England still outside the Federation are those connected with the north and north-east Lancashire and Chorley cotton spinners' and manufacturers' associations. These associations are largely composed of manufacturers, and the spindles affiliated with them represent about one-tenth of the spindles in England.

It is hoped that ere long they, and the few spinning concerns in each of the districts of the Federation area, who, for reasons of their own, have held aloof from the Master Cotton Spinners' Federation, will see that it is to their advantage, as well as to that of the trade generally, to join their local associations and be included in the Federation.

It must be recognised that the spinning section of the cotton industry, being the first process and the one which employs the largest amount of capital, controls the industry to a much greater extent than the manufacturing section. But the ideal position is that there should be two federations in each country, one embracing the spinning section and the other the manufacturing, each conducting the ordinary routine separately, but consulting in emergencies, and acting together whenever it is to their mutual interests to do so.

It was only after many years of patient and determined work, amid much discouragement, that the English Federation of Master Cotton Spinners' Associations attained the position it now occupies; a position which enabled it during the recent crisis to play such an important part in averting a disaster to a great industry, a disaster that might have assumed national dimensions.

It is impossible to emphasise too strongly the importance of complete organisation. In order to be an effective executive force, it is necessary in the first place to be prepared to make certain sacrifices. A large yearly income and an accumulated reserve fund is an absolute necessity, but as this is spread over a wide area the individual employer's contribution is small for the benefits received. There must, further, be complete confidence in the men appointed on the executive committee, and when a line of action has been carefully considered and decided upon by this body, it must be loyally adhered to, otherwise federation becomes a name only and not a power. This will explain the hesitation of the General Committee of the English Master Cotton Spinners' Federation with regard to international federation, but the stress of circumstances at the end of 1903 led to the initiation of a movement which resulted in the holding of the first International Congress twelve months ago. As a result of this first Congress, it is confidently expected that an international federation will be formed, which may ultimately become a great factor in the regulation of the cotton industry of the world.

In weighing up the difficulties of carrying out successfully the new departure taken in December, 1903, it was resolved that everything possible should be done to make the movement a success. With this end in view, it was decided to seek the assistance of the British Government in summoning the Congress; consequently, a deputation waited upon Mr. A. J. Balfour, the Prime Minister, who, after giving the matter careful consideration, and, doubtless, with good reasons, declined the request. So acute was the crisis in the industry, however, that this disappointment was not allowed to discourage those who had the matter

in hand, and although the time left for issuing the invitation to an international congress was very short, only some three weeks, it was decided to carry out the project. The first International Cotton Congress, held in the beautiful city of Zurich, twelve months ago, is now a matter of history, and is generally admitted to have been an unqualified success. This Congress was attended by sixty-five delegates, representing the principal associations of cotton employers from nine European countries. The delegates consisted of men, who, at considerable personal sacrifice, had taken a leading part in the organisation of the industry in their respective countries—men who recognised their responsibilities in a wider sense than the mere management of their own businesses, and who also realised that the welfare of the individual is inseparably bound up with the welfare of the industry as a whole.

It is unnecessary to enter into the details of the proceedings at Zurich, as official reports have been widely distributed to the users of cotton throughout the world. The International Committee gratefully acknowledge their indebtedness to the Marquis of Lansdowne, Foreign Secretary, and to the Rt. Hon. Alfred Lyttleton, Colonial Secretary, for their assistance in the distribution of these reports to the heads of governments throughout the world and the British colonies, most of whom have officially acknowledged these reports; and special communications which have been received indicate appreciation on the part of the recipients. The International Committee also were encouraged by the interest evinced by Monsieur Doumergue, ex-Colonial Minister of France, who received the Committee in Paris during their sittings there in September last. They also appreciated the attention they received from Monsieur Droogmanns, Secretary of the Congo Free State, who showed a like interest by receiving the Committee at the sittings at Brussels, in April last. The International Committee have further gratefully to acknowledge the cordial welcome and encouragement given by Mr. A. Bonar Law, M.P., Parliamentary Secretary to the Board of Trade, who, in the unavoidable absence through illness of the Marquis of Salisbury, President of the Board of Trade, received the Committee in London, on June 3rd.

In addition to this there is full appreciation of the services rendered by the Rt. Hon. Alfred Lyttleton, the Duke of Marlborough, and the Rt. Hon. St. John Brodrick for their valuable co-operation in promoting the cultivation of cotton in the British Empire, which it is felt is not only for the welfare of the British cotton industry, but for the welfare of the cotton industry of the world. It is satisfactory that this broad view obtains among those who are promoting the growth of cotton in the colonies of other European countries.

When it is remembered that the American cotton crop thirty years ago only averaged about 4,000,000 bales, and that this season's crop may reach 13,000,000 bales, the whole of which will be required to relieve the tension caused by the shortage during the previous years, it shows how urgent is the necessity for opening up new sources of supply. There is every indication that the development of this world-wide industry will be even greater in the future than it has been in the past. It is satisfactory in the circumstances, that statesmen are assisting public-spirited men in furthering the extension of the growth of cotton.

The success which so far has attended the movement for dealing with the cotton industry internationally must not be allowed to minimise the difficulties of working such a great organisation. Experience has proved that slow development is more conducive to ultimate success than either attempting, or even expecting, too great results in a short time. It cannot be too forcibly impressed upon the delegates attending this Congress, that, when they return to their respective associations, their first work must be to perfect the organisation of the associations and federations of associations in the affiliated countries, and that this must be done before an international federation can effectively deal with the various problems of the future. It is impossible to say what might not be accomplished by well-organised international federation in watching over and protecting the common interests of the industry, and in taking action in any common danger. Among some of the advantages would be the disseminating of reliable information regarding the supply of the raw material, and the securing of a much greater control of it, an adequate supply at a reasonable price being so essential to the successful carrying on of the industry.

It is not to the advantage of the users of cotton that the growers of their raw material should not get adequate remuneration, and the fluctuations of price brought about by a large or small yield is legitimate enough. It is these violent fluctuations brought about largely by the manipulation of operators which affect more or less all growths of cotton, and are so detrimental to the welfare of the industry.

The possibilities of a combination of users being sufficiently powerful to checkmate speculative operations are very great, and when it is remembered that every halfpenny per pound that is added to the average price of the cotton crop of the world in a single season means £16,000,000, and that it has been raised as much as 2d. or 3d. per lb. during the recent crisis, anything that would prevent such undue enhancement would be of inestimable benefit. A large proportion of

such advances certainly does not find its way into the hands of the planters or the legitimate middlemen, but into those of the operators. It must also be borne in mind that any serious rise in the price of raw cotton undoubtedly reduces the demand for the manufactured products, and, consequently, the employment for the spindles and looms, the largest consumers of cotton goods being the poorest people in the world. Then, again, violent fluctuations in the price of the raw material interfere most seriously with the smooth working of the industry, and heavy losses are frequently incurred by those who have their capital invested in it.

The cotton industry has been subject in the past to dislocation by war, pestilence, and famine, and to undue extension of production during periods of prosperity.

Experience in dealing with the recent crisis has conclusively demonstrated that the only effective method of meeting trade conditions that lead to temporary overproduction is by organised effort to regulate the supply to the demand, and that such a line of action is the best in the interests of both the employers and operatives.

Could it but be fully realised how a great industry may be rendered unprofitable by producing even only a little in excess of requirements, and how small is the sacrifice necessary to regulate the balance of supply and demand if all unite, there would be no hesitation in adopting such a policy, that is, either to restrict production, or, if special circumstances prevent this in some cases, to pay a levy to the federation funds which would be an honourable equivalent to stoppage. No doubt some may consider such proposals are unworkable, but what has been done so recently by a quarter of the spindles of the world can be done by the whole, efficient organisation being all that is necessary, either in dealing with the cotton industry in individual countries, or in dealing with conditions which affect the cotton industry of the world.

The friendly intercourse that took place among the representatives of the nine nationalities, which constituted the first International Congress, showed how diversified are the conditions under which the cotton industry is carried on, and that each country takes its own part. At the same time, all were convinced that there is much in common, and that international federation is becoming a necessity of the times. Such a federation of those engaged in this world-wide industry must also act as a powerful factor in promoting peace and goodwill among the nations.

I now call upon Señor Calvet, the President of the Spanish Cotton Spinners' Association, to say a few words.

Señor CALVET (speaking in English) said: I rise to discharge a duty no less honourable and agreeable than it is difficult. Honourable and agreeable to greet you in the name of my companions here present, and in that of the Spanish Cotton Industry represented by them; and difficult because, unfortunately, I am at a loss to express my sentiments at this moment.

This is the first Cotton Congress at which a Spanish delegation assists officially, and until recently our Association had not joined the International Cotton Federation. Yet do not believe that this implies any lack of desire on our part to co-operate in this work so far as it may be in our power, or that we are not aware of its importance and utility. Thanks to the kindness of Mr. Taveira, the representative of Portugal, and to the reports of the Congress at Zurich, which were published by our trade journals, we are perfectly acquainted with all the importance of the work you have carried out, and the necessity of an international understanding to defend the great interests of the cotton industry.

The constitution of the International Association is approved by the local committees which we have rapidly organised in order to enable us to join you and co-operate in your task, modestly but with great enthusiasm, and also, if you wish, with a view to self-interest, and so as to avail ourselves of the salutary lessons that can be learned from a mutual knowledge of men and trades.

You can count upon the cotton industry of our country, of about three million spindles and sixty thousand looms,—no mean figures if you bear in mind the population and the limited demands of the Spanish market, and that this industry is established almost exclusively in Catalonia.

Owing to the peculiar circumstances our country has passed through during the last few years, there has been some delay in the progressive development of the cotton industry and the association movement so indispensable nowadays. This is why we have not yet embraced in our local association all the factors I mentioned before, but I am convinced that ere long we shall obtain the adhesion of the great majority.

I do not want to abuse the kind attention you have given me. You know our intentions. We come here willing to work, so far as it be possible, to assist and strengthen the International Federation of Cotton

Spinners and Manufacturers, and to cement our mutual understanding, so as to defend our common interests.

Before entering on the study of the problems which constitute the object of the Congress, permit me in the name of the Spanish cotton industry which I have mentioned, to offer my most hearty greeting to the Delegates of the nations who constitute the International Committee, greeting which I would offer more especially to the President, Mr. Macara, and to the English Associations for the courteous and kind hospitality with which we have been received, and for which we find no words to express our gratitude. Yet there remains to us the hope that one day we may enjoy the honour of receiving you and returning your great kindness, if not in the measure of your merits, at least with the frank, loyal, and sincere hospitality which we now most heartily offer.

Pray receive the sincere adhesion and cordial salutations of the Spanish cotton industry.

The Secretary, Mr. JOHN SMETHURST, read the report of the International Committee, which was as follows:—

In presenting its first Annual Report, your Committee desires to place on record its intense satisfaction that the First International Congress of Representatives of Master Cotton Spinners' and Manufacturers' Associations, held at Zurich last year, proved to be such an unqualified success. The goodwill and mutual forbearance displayed at that gathering were a happy augury for the success of the International Federation, which it is believed is destined to play an important part in the carrying on of one of the world's greatest industries.

Following close on the Zurich Congress, your Committee had to regret the loss, through death, of a trusted and valued colleague, Monsieur GEORGES MOTTE, the President of the French Federation of Master Cotton Spinners and Manufacturers. A suitable letter of condolence was forwarded by the Committee to Madame MOTTE, and Monsieur BERGER was appointed to take his place on the Committee.

The preparation of a report of the proceedings of the First Congress was a work requiring the greatest care and attention. The Report, translated into the three official languages, was widely circulated, and has no doubt been read with considerable interest. Copies were supplied to the heads of Governments, and the Rulers of all European nations.

In accordance with the instructions received at Zurich, your Committee has devoted a considerable amount of time and thought to the preparation of a Constitution and Code of Rules, for the efficient and business-like working of the proposed International Federation. Your Committee's recommendations have been submitted to all the Associations represented at Zurich. Various amendments and additions have been suggested, and the amended Constitution and Rules will be placed before this Congress for adoption or otherwise.

Your Committee is of opinion that the Constitution, as now submitted, is worthy of acceptance, and it is hoped that one result of the Second International Congress will be the successful launching of a Federation, which, in the near future, will prove of the greatest benefit to Cotton Spinners and Manufacturers of all nations.

One of the most important subjects dealt with at Zurich, was the question of increasing the sources of cotton supply.

Your Committee desires to gratefully acknowledge the courtesy of Monsieur DOUMERGUE, ex-Colonial Minister of France, and Monsieur DROOGMANN, Secretary of the Congo Free State, who received the Committee in Paris and Brussels, and who spoke of the profound interest they and their Governments took in all measures having for their object the increasing of the supply of cotton.

Monsieur CASIMIR BERGER, who was deputed by your Committee to collect information on this subject, will present a Report to the Congress, and his Report will be supplemented by one to be read by Senhor TAVEIRA.

The question as to the universal adoption of the Metric System of Weights and Measures has received attention, and Herr FERD. GROSS has prepared an exhaustive Report, which will be presented on Thursday next, when papers will also be read by Messrs. J. R. BYROM and T. ROBERTS, who will deal with the subject from the English Spinners' and Manufacturers' standpoint.

Herr KUFFLER, at the request of your Committee, has studied the question of "The Regulation of the Purchase of Cotton," and will submit his views to the Congress to-morrow.

For the efficient and useful working of an International Federation the question of Organisation is all-important. Your Committee, after having carefully gone into the question in all its bearings, is of opinion that the time is opportune for the appointment of a Continental Secretary. Preliminary steps have been taken by the Chairman and Vice-Chairman of the Committee with a view to obtaining the services of a suitable man, who should combine, with some technical knowledge, a thorough acquaintance with the English, French and German languages. Several applicants for the position have been interviewed, and at a later stage of the proceedings of this Congress, your Committee will submit a recommendation for the appointment of a Continental Secretary, to act along with Mr. SMETHURST.

In this connection your Committee desires to testify its high appreciation of the services of Mr. JOHN SMETHURST, who was appointed Secretary at the Zurich Congress, and the following resolution, which was unanimously adopted by your Committee at Brussels, will, it is confidently believed, be heartily endorsed by this Congress:—

"The International Committee desires to place on record its high appreciation of the very efficient and valuable work of Mr. JOHN SMETHURST in connection with the International Federation, and unanimously recommends that as Honorary Secretary to the Committee he be paid an honorarium of one hundred pounds per annum, commencing from the Manchester Congress."

Much valuable information on the question of Organisation has been collected by Monsieur JEAN DE HEMPTINNE, which will be of great assistance to your Committee when it comes to deal with the efficient organising of the various Associations comprising the International Federation.

Communications have been opened up with Associations not represented at Zurich, with a view to their becoming affiliated. It is pleasing to report that as a result of these endeavours the spinners of Spain have decided to become members, and Señor EDUARDO CALVET has been designated as their representative on the Committee. It is hoped that before very long the Federation will include in its membership the Cotton Spinning and Manufacturing Associations of all countries. That this should become an accomplished fact is of the greatest importance, as only by united action can many of the difficulties of the industry be successfully combated.

Your Committee cannot close its report without expressing its deep sense of gratitude at the evidences it has received, from many quarters, of the keen desire to welcome to England the delegated representatives of the cotton spinning and manufacturing industries of various nationalities. Your Committee accepts those evidences of kindness and goodwill in the spirit in which they are tendered. It expresses the firm conviction that differences of language and custom need be no barrier to deep and sincere friendship. Though formed for the purpose of safeguarding the mutual interests of its members, the fervent wish is expressed that the International Federation may be one of the most powerful instruments in bringing the nations more closely together, and do something in the realisation of the ideal so feelingly expressed at the first Congress :—

“The Parliament of man, the Federation of the world.”

This report was adopted on the motion of the CHAIRMAN, seconded by Herr KUFFLER.

Mr. SMETHURST presented the financial statement.

In moving its adoption, the PRESIDENT said: I should like to explain that the various associations connected with this organisation pay the expenses of their delegates, so that these expenses are not included in this statement.

Herr Syz seconded the motion, which was agreed to.

CONSTITUTION AND RULES.

The PRESIDENT: The framing of the Constitution and Rules has taken a large portion of the time and attention of the International Committee at their meetings in Paris and Brussels.

These regulations were submitted, after the Paris meeting, to all Associations interested. Some amendments were proposed by different Associations, and these were considered at the Brussels meeting in April last. Perhaps the most important amendment is that which

provides for a deputy member of Committee who, if his country desires it, may attend all meetings of Committee; but he does so without voting power.

The Rules are in your hands, and I hope you have had opportunity for their careful perusal.

In order to put this matter in due form before the Congress, I have now much pleasure in moving the adoption of these Statutes.

Herr Syz seconded the motion.

Herr A. KUFFLER: The Chairman has proposed the adoption of the Statutes which have been compiled by the International Committee. To draw up these Statutes was the first work of that Committee. One of the most important questions was, how this Committee should represent the different countries and how they could be best represented. It is, of course, only possible to work effectively with a small Committee. The smaller the Committee, the better the work and the more can be accomplished. Although the first Committee fully recognised the enormous difference in the importance of the industries in the various countries, the Committee has thought it advisable to propose to you that only one member ought to be nominated for each country, without regard to the importance of the industry in such country. In all the great industrial countries organisation is so far advanced that it is likely that only such men will be nominated for the Committee as can best express the wishes of their respective countries. The other conditions contained in the Statutes are only of a formal character. They contain nothing which would compel any of the represented Associations to accept and submit to a resolution adopted by the International Federation. The sole purpose is to make proposals and to take steps to work for the common interest. The only obligation is to pay the Levy. This Levy has been fixed. It amounts to $\frac{1}{100}$ of a penny per spindle, and $\frac{1}{4}$ d. per loom. In the first year the double amount has to be paid which includes the Entrance Fee. This is the only binding obligation. All other resolutions and obligations can be considered independently by each Association, and in each case they can decide whether they submit to them or not. The Committee has thought it advisable to draw as many delegates as possible to the Congress. The Congress in Zurich proved that it is most desirable to bring as many people as possible together, to make them acquainted with each other, and give them an opportunity to discuss their mutual affairs. Of course, the number of votes must be restricted. They have been fixed at one vote for each million spindles, or one vote for 40,000 looms, but no country can have more than twenty

votes. I think I have given you in these few words the gist of the Statutes.

Mr. J. R. BYROM suggested that two representatives from England should have seats on the Committee.

Mr. S. NEWTON seconded this amendment.

Mr. J. M. THOMAS desired it to be made clear that the one representative should be a spinner and the other a manufacturer.

Herr A. KUFFLER: Would you allow me to remind you that the subject of this amendment was before the Congress at Zurich, and that we had a long discussion upon it? We can understand that it would be good to have more delegates on this Committee, and that the interests of the spinners and manufacturers are not always the same, and one man cannot very well always represent both interests. But, we must understand that in every country where there is a cotton industry there is spinning and manufacturing. I don't know of any country where there is only spinning or only manufacturing. If you want to have the thing on a fair basis you must allow one delegate for the manufacturers of every nationality represented here if you allow a representative for the English manufacturers, for the same differences of opinion will exist between the German spinner and the German manufacturer, and the French spinner and the French manufacturer. If you think the manufacturing interest should be represented on this Committee you must give representation to the manufacturing interest of all the countries. That would make the committee of 12 into a committee of 24, and as you will have deputies, a committee of 24 will make a committee of 48. We will very soon get to the whole of the Congress. If you think we should have more meetings a year, you can call together two Congresses, or three Congresses, but it could hardly be called a committee meeting if you have to call together 48 gentlemen from all parts of the world, and I think this practical view of the thing would make it very difficult to have more members on this Committee. But there is still another argument; we don't intend, at least I understand this international organisation does not intend to work on any question where the interests are divided. I think there are so many points where there is a common interest for all nationalities, and for all users of cotton, whether they use the thread or the raw material, that for many years we shall have plenty of work to do. If we can organise ourselves to work these matters of common interest, I think we could leave out every controversial point between the spinner and the manufacturer from the beginning. I think such questions as the extension of planting of cotton and similar ones are exactly of the same interest to the spinner as to the

manufacturer, and I think we might be able to avoid all those difficulties if we left it as it is now in the Statutes. I wish to deal with one other point. Of course, if the spinners alone are represented, it may be that for some large manufacturing association it may not seem fair to pay the same levies as the spinners. I think in discussing that, either to-day or to-morrow, under the head of organisation, we should find some way to deal with it, and to make perhaps a kind of associate membership for all organisations other than spinners, who want to join the Congress, but still not become full members. I think these difficulties could be avoided. And then, as a last point, as we have a deputy member for every nationality, the local committee or the local organisation could always arrange to have a spinner as member and a manufacturer as deputy, and as Mr. Macara has pointed out, the deputy will have power to attend the meetings of the Committee and they will always have the means to object at once if any motion is brought forward that they consider undesirable. If you consider all these points together I think you might just as well leave it as it is and try to get over these difficulties by appointing a manufacturer as deputy, and making alterations in the rule as to associated membership to allow manufacturers to fall in without becoming full members.

Mr. H. HICSON considered that, as the matters of Organisation and the Levy were down for discussion on the following day, it would be wise to postpone further reference to this subject till then.

Mr. E. STANSFIELD supported this view.

After some remarks by Mr. J. L. TATTERSALL and Mr. J. T. DAWSON, the Congress unanimously approved of the adjournment of the discussion.

SECOND DAY'S PROCEEDINGS.

TUESDAY, JUNE 6th.

CHAIRMAN: HERR ARTHUR KUFFLER.

The CHAIRMAN, thanking the Congress for the honour bestowed upon him by his appointment to the chair, said he took it as a kind of international courtesy that this honour should be conferred on the representatives of the smaller industrial countries after those of such countries as England, Germany and France had held the seat.

The Minutes of the business of the previous day were read and adopted.

CONSTITUTION AND RULES.

The CHAIRMAN said the first business was the reconsideration of the Rules. There were two motions to bring before the Congress in regard to representation on the Committee; one, the unanimous recommendation of the executive committee, and the other by Herr Langen. The proposed amendments were to clause 11. Herr Langen proposed that it should read:—

“The Committee shall consist of one Delegate from each country affiliated to the International Federation. Countries having more than twenty million spindles, or the proportionate number of looms, shall be entitled to two Delegates.”

The Committee's view was that the Chairman, who presided over the permanent work of the Committee and of the office in Manchester, should not be looked upon as an ordinary delegate, but should be considered as representing the whole of the countries affiliated, and that the country to which he belonged should be entitled to another delegate. If the Congress adopted the recommendation of the Committee, the clause would read:—

“The Committee of Management shall consist of one Delegate from each country affiliated to the International Federation, and the Committee, from its own members, shall appoint the Chairman, Vice-chairman, and two honorary Treasurers of the Federation. Each country shall appoint its own Delegate. The country which the Chairman of the Committee of Management represents shall be entitled to another representative on the Committee.”

This would make it necessary to alter clause 32, which reads:—

“A Delegate of the country in which Congress assembles shall usually preside over the opening meeting of Congress and

welcome the Delegates. The President of the International Federation will then take the chair, the names of the Delegates shall be called over, and the President's address be given. After which shall follow the reading of a Report of the proceedings of the Committee of Management, and the presentation of the Financial Statement."

The Committee thought that it would be better if the delegate or member of committee representing the country in which the Congress was held, should be the President of such Congress. They had Herr Syz, President of the Swiss Association, presiding over the Congress at Zurich last year. This year it was the turn of Mr. Macara to preside at the Congress in England. If the Congress were held in France, M. Berger would preside, and if in Germany, the chairman would be Herr Gross. Therefore, clause 32 should read:—

“The member of the Committee of Management representing the country in which the Congress assembles shall preside over such Congress. The names of the Delegates shall be called over, after which the Chairman of the Committee of Management shall present the Report, to be followed by the reading of the Financial Statement.”

Herr C. O. LANGEN: I should like to support this motion. I think this is a compromise which is entirely fair and just, and which does not alter the present Statutes very materially. I think the solution of this question a very good one, and I should like to urge the acceptance of the alteration.

The CHAIRMAN then moved the amendments to Rules 11 and 32, as proposed by the Committee, and expressed the opinion that by their adoption many difficulties would be overcome.

Mr. S. NEWTON seconded the motion.

Mr. J. B. TATTERSALL explained that the Rules were not like the laws of the Medes and Persians—they were not unalterable. It must be by experience that they would discover the best methods of performing the work that lay before them. As they appreciated and understood each other more in the years to come, they would more nearly approach the organisation which they thought just and equal to all.

The amended Rules, as suggested by the Committee, were unanimously adopted, and the CHAIRMAN observed: I think you have done very good work. It is the best thing that could have been done, for we have now overcome all difficulties.

THE AMERICAN DELEGATE.

At this stage Mr. S. S. Dale, the American Delegate, arrived, and was heartily welcomed.

Acknowledging his reception, Mr. DALE said: Our cotton associations are in thorough sympathy with the general principle of international organisation, but they have not yet reached the point where they are prepared to organise for the restriction of the consumption of American cotton. You will appreciate that in our country we have peculiar conditions. We have not yet, perhaps, got out of the provincial idea. But our ideas are broadening slowly, and as our export trade increases, and our interests outside our own tariff walls enlarge, we will doubtless be more ready to join in the international organisation which you have so auspiciously inaugurated.

ORGANISATION WORK.

APPOINTMENT OF A PERMANENT SECRETARY.

The Congress next turned its attention to organisation work, the importance of which was emphasised by the Chairman.

M. JEAN DE HEMPTINNE (Belgium): The question of the organisation of the International Federation is of the highest importance, and deserves the fullest attention of the Congress. Next to that of the increase and the development of the cultivation of cotton, it is pre-eminently the one which should give the most practical results. It is plain that in order to establish an enduring and earnest International Federation it should be based on well-organised associations in all countries. It becomes imperative that at any given moment the Federation should be able to find in them a point of support enabling it to take measures of a general and common interest. Should we, unfortunately, once more find ourselves face to face with the difficulties which brought about our strenuous endeavour towards the understanding which we inaugurated last year, at the Congress held in Zurich, the intervention of the International Federation will certainly become necessary, and it could only intervene efficaciously if it had in each country a seriously constituted association. There are other circumstances which might lead the Federation to take measures of general interest for the cotton industry, *e.g.*, the questions of transport, packing, conditions of sale, humidity, waste, arbitration, and so forth. Here, again, it could not intervene, were it not to have the earnest support of its component associations.

This question is, assuredly, a most vital one, and should be deeply gone into. It would, it appears, be most difficult, nay, even impossible, to adopt a uniform type of organisation for all countries. The totally different conditions of their commerce and industry place each one of them in a separate situation. A measure productive of excellent results in one country might bring about the most disastrous

consequences in another. Each country should consider the statutes and regulations suitable to it. Information courteously supplied to me by members of the International Committee has convinced me that in several countries the associations are far from having attained a satisfactory degree of organisation. It is fair to say that several associations are of recent creation, and have not yet had time to perfect themselves. The powerful Master Spinners' Federation in England had to labour for over fifteen years to obtain the degree of perfection which we so admire, and I hope I may be permitted to render homage to the President and to the General Committee, who, by virtue of their energy and their increasing and persistent labours, have brought this Federation to so high a degree of perfection. But, if on the one hand the question of organisation is of the most delicate, none the less is it unavoidable. It forces itself upon us. The countries which do not enter resolutely upon the road of organisation will become the victims of their negligence and lack of foresight. This necessity has its source in the modern organisations of trade and industry.

The conditions under which the cotton industry is compelled to work and develop itself have undergone a complete transformation in the last twenty-five years. We no longer live in the times where industrial interests were confined to the few. The creation of limited companies has completely transformed this state of things. Formerly, a more favourable topographical situation, unusual skill, or a manufacturing secret sedulously concealed from competitors, more perfect machinery, allowed an intelligent and enterprising spinner to fight his neighbours to his own advantage. The means of transport, and the facilities for communication, have also disturbed our ancient habits. Competition has been fiercer, and has spread throughout the whole world. A new condition of affairs calls forth fresh needs. We must organise, under penalty of seeing our profits daily become less and less without benefit to anybody. How is such a state of organisation to be reached? In my opinion, the Committee should resolutely take the task in hand, and should begin by drawing up an exact report on the state of affairs in the several countries. It might entrust the report to the Secretary of the Committee, who should go into each country and study its existing organisation. He should meet the committees and study with them the statutes and regulations most readily to be applied to use. It would be necessary to point out in each country to hesitating spinners the considerable advantages of, first, a local understanding, secondly, a general one. They must be educated up to it. It is not the work of a day, but by dint of intelligence and patient work we shall attain results which will in a few years surprise us.

The CHAIRMAN agreed that it was necessary a Permanent Secretary should be appointed. In the various countries affiliated to the International Federation the organisations were different. Indeed, they could not expect all to be organised alike. But if they desired to come to an international understanding, they must point out to their friends what were their mutual points of interest. They must help to build up their organisations in a way which would fall in with the international movement.

It was of importance that they should have a Permanent Secretary, particularly for the continental work. The cotton trade in England was so well organised that he did not think those connected with it required much assistance in the matter, but it was not so in regard to the Continent. The Congress required a Permanent Secretary, particularly to study the organisations on the Continent and assist in building up, not a uniform organisation, which could not be done, but an organisation that was best adapted for the various countries. If they knew what the different organisations were like, they would be able to judge as to what common steps they could take. For instance, last year the English Federation called upon the continental and American organisations to fall in with a proposal to reduce the working hours and so reduce the output, but they did not know that those organisations had never studied this question. It would be the work of a Permanent Secretary to inform the organisations in the different countries what could be done, and to report to the International Federation. In this way they would be able to bring all organisations to a state of perfection for dealing with those questions which were of common interest.

Herr Syz said all the secretarial work in connection with the first and second Congresses had been carried out by two gentlemen who only held honorary positions in connection with the International Federation, Mr. J. Smethurst, Secretary of the Federation of Master Cotton Spinners' Associations, and Mr. C. Davidson, Private Secretary to the President. These gentlemen had rendered valuable services to the International Federation, and these services were all the more highly valued because they had been rendered at considerable sacrifice. It was right that the work of these two gentlemen should be recognised when the Congress was dealing with the question of appointing a Permanent Secretary. Since the meeting in Paris, last October, the Committee had been looking round for a suitable gentleman for the position, and they found the task more difficult than they had expected. They required a man who could not only speak English, French and

German, but who understood those languages thoroughly and was able to write them, so that the Federation could dispense with translations by outsiders not conversant with the trade, and have translations which brought out the happiest expressions. A great many candidates had presented themselves for the position, and the Committee had found in Manchester a gentleman who, they believed, was the right man. He was Mr. Arno Schmidt, a German who had become a naturalised Englishman. The members of the Committee saw him at Brussels, and they were of opinion that in Mr. Schmidt they had a gentleman who would work hard and do his best for the Federation. Herr Syz concluded by moving the appointment of Mr. Schmidt.

Mr. E. TRAVIS (England) agreed with the Chairman that the question of organisation was the most important that could be brought before the Congress. They could not be successful in any question they took up, whether it were damp in cotton, the metric system, or cotton corners, unless they acted as one man. He spoke with some experience of organisation, and he thought they would have to begin with the unit—the individual firm. The various associations in a country would have to be federated as they were in England, and they would have to do the work with the assistance of the Permanent Secretary. In Oldham this was almost a personal work. Members of the Committee approached people they were anxious should join their association, and they would not cease exercising their persuasive powers until their efforts succeeded or they found that success was impossible. Only lately a million spindles were added to the Oldham Association, and 500,000 more would be added shortly. Still, though the organisation of the English cotton trade had reached a high standard, there were still twenty per cent. of spindles not yet in line. Their ideal should be to get every firm in the trade into their Associations.

Mr. J. B. TATTERSALL (England) said so far as England was concerned they had given all particulars as to members, spindlage and looms, and he had been given to understand that information as regards the Continent was being prepared for this Congress.

The CHAIRMAN said steps had been taken to prepare certain information which the Committee thought was necessary, but they could not obtain all the particulars they required, and had been unable to submit a full statement. One of the reasons which induced them to ask for the appointment of a Permanent Secretary was that they did not think this great work could be done by voluntary effort alone. It was no small task to acquire information as to the various organisations that were in existence. They had at that Congress delegates

from 25 different organisations on the Continent, and the rules of those organisations would have to be studied before the information of which Mr. Tattersall spoke could be obtained. Though all those present were willing to do work for the International Federation, they could not devote the time that was necessary, and he thought Mr. Tattersall would vote for the appointment of a gentleman to do this work for them. There was an organisation in nearly every country, but these organisations varied. In some cases they were formed to deal with labour questions, and were not confined to spinners, but embraced the whole trade. In Switzerland, Herr Syz was the President of an organisation which covered the whole trade, but in some countries spinners had formed local associations. In Germany, there were six employers' organisations, which were not much in touch with one another, while in France there were three different organisations of spinners, and two for manufacturers. In Austria, which was a much smaller country as regards the cotton industry, there were two organisations, one of them covering nearly all the spinning trade. In protected countries home competition would always bring prices down, and in those countries it was necessary, if it was wished to enjoy the protection of the tariffs, to have some arrangement amongst spinners about prices. Such an arrangement as that would not do for an exporting country, where spinners could not make arrangements amongst themselves about prices. There were other arrangements, the one which covered insurance for example. England had had difficulties about fire insurance, and had overcome them, but these difficulties had not yet been overcome on the Continent, and there were special continental organisations to deal with this question. It would be the duty of a Permanent Secretary to study all these associations, to try to show how they could be brought in closer touch with each other. If they were to have united international action, they would then have to deal with eight or ten representative organisations, instead of with twenty or thirty which did not cover the whole trade.

Mr. E. STANSFIELD (England) remarked that the appointment of a Secretary, who would be very largely employed in moulding and shaping the 25 different organisations on the Continent—the English organisation being so complete that it would need practically little assistance from such an official—was clearly for the benefit of the Continent. But it was necessary for the success of the international movement that they should assist the smaller organisations on the Continent to come into line; to get into that condition which would enable the work to proceed more smoothly.

M. BERGER seconded the resolution, which was unanimously adopted.

THE HANDLING OF COTTON.

The Chairman introduced the question of the handling of cotton and, referring to bagging, said on the Continent it was doing spinners actual harm, as it was not only responsible for a great deal of waste but it led to a large quantity of cotton being spoilt. Means must be adopted for getting rid of these grievances, but he was quite sure that whatever alterations took place would not come from the American cotton sellers. The spinner should be the man to say "I don't want this kind of bagging any more." The question of "no-mark" bales also caused a great deal of annoyance. It often happened that you could not read the mark, and it struck him as being strange that this usually happened with the worst cotton.

Mr. H. W. MACALISTER (England), in explaining the cause of "no-mark" bales, said in a year like the present, when there was so much cotton in America, a large proportion of the crop was stored practically uncovered in the streets, the side walks, and the fields. He had recently had reason to look into the rules of some of the Exchanges in America, and had found what precautions were taken to protect the buyer against the cotton being damaged in transit. In the process of transit cotton came by railway, and a large proportion also came by steamer down the Mississippi. When cotton arrived, as it had been doing this year, in such large quantities that the storage was not sufficient for it, some of it had to be put on walks. Although the rules provided that the cotton should be shedded, and underneath it a piece of wood placed to protect it from absorbing moisture in the event of rain, a large proportion was damaged by lying in water or being rained upon. The consequence was that the bagging became rotten and the marks disappeared. That was how they came to get "no-mark" bales.

Mr. E. STANSFIELD said there was room for great improvement both as regards the bagging and marking of bales. Probably there was no commodity in the world which was so badly treated as cotton. He had felt for some time that America ought to do what was done in Egypt. There was no better bale in the world than the Egyptian. It was stated that if American cotton was baled in the same way as Egyptian, the fibre would be damaged, but he had never known Egyptian cotton to be damaged by pressure, and he had used large quantities of it. Neither had he heard of East Indian cotton being damaged from such a cause. He could not see why the Americans could not alter their methods. If they did it would settle ninety per cent. of the complaints with regard to damage through bad baling. If Egyptian or East Indian bales were left in the open very little damage

resulted, because it was impossible for water to get inside. As to the markings there had been a little improvement, some of the merchants, or factors, or dealers having adopted a metal label.

Baron CANTONI said he would like to know what steps they could take to enforce their views on this subject. Up to the present they had not found a way of getting on even terms with the people who had the cotton, and dealt with it just as they pleased. He did not think that the Americans would be greatly impressed with an expression of their views in regard to these grievances. The users of cotton must adopt something more effective than that; they must either be willing to pay more for bales that were packed properly, or refuse those that were not packed properly.

Mr. MACALISTER pointed out that America was a very large country, and that the bagging system there was not organised in the way it was in Egypt. It was only fair to state that in Egypt there was only a comparatively small area in which cotton was ginned. There were certain merchants there who had large ginneries dotted over the country, and all the cotton came to them. That was a perfect system. Further than that, they had in Egypt what they had not in America—all the most perfect appliances for bagging. The presses in America were what people in England would consider crude, and they were mostly made of wood.

The CHAIRMAN, in reviewing the discussion, said they were agreed upon the desirableness of an improvement in the bagging and marking of American cotton. Did not they think the Congress could take some practical action in the matter? Could they not approach the Cotton Exchanges in Liverpool and Bremen, and ask them to make a rule that cotton was only tenderable when the bales bore under the bands metal labels on which were the marks. If that were done they would do away with the no-mark bales. This question was ripe for action, but he did not know whether the same could be said in regard to bagging.

The further consideration of the question was postponed.

THE POSITION OF THE NETHERLANDS.

M. R. A. DE MONCHY, Jr. (Netherlands), expressed his regret that the cotton growers of the Dutch Colonies were not present at the Zurich Congress. All the resolutions adopted on that occasion had their full sympathy. Since coming to Manchester, he had been much impressed by the importance of the work of the Congress, and on his return he should urge his fellow employers in Holland to throw themselves much more heartily into the work of international organisation.

The sitting was then adjourned until the afternoon.

The Congress reassembled in the afternoon, Herr Kuffler again presiding.

The CHAIRMAN: Your Committee met after this morning's sitting and considered the question of the Levy. I am glad to say that they unanimously decided that the Levy shall be reduced by one-half in comparison to the clauses 6 and 7. The Entrance Fee, including the first year's Levy, will be $\frac{1}{100}$ d. of a penny per spindle instead of $\frac{2}{100}$ d., and a farthing instead of a halfpenny per loom. Next year it will be $\frac{1}{200}$ d. per spindle instead of $\frac{1}{100}$ d., and one-eighth of a penny instead of a farthing per loom. One more important alteration, to paragraph 23, has been unanimously accepted by the Committee. I have the honour to move the adoption of these alterations in the name of the Committee.

Mr. H. HIGSON: I have great pleasure in seconding the resolution that has been submitted by the Chairman. I think the Committee have done an extremely wise thing in reducing this Levy by one-half. Officials in connection with large associations, such as we have in Lancashire, have found a very serious difficulty in suggesting that a levy of the amount of that originally fixed should be paid for membership of the International Federation. They recognise that sufficient money is in hand, and is likely to remain in hand, to defray all the legitimate expenses in connection with this organisation, and the holding of this Congress from time to time; at the same time, they are prepared to hold themselves in readiness to contribute a larger sum when the Association goes further into its work, and further expenditure is needed to bring about the remedy of the evils attending the cotton trade that are admitted to exist. I am sure we shall induce other associations to join us in time. We can recommend this levy to the Association I represent with the assurance that it will be accepted. One point more, I should like it to be understood that we are not committed to a further levy of one-eighth of a penny unless the funds of the International Federation necessitate it. We have a strong feeling that unless a special need arises for an unusual expenditure there is no useful purpose served by the creation of a large reserve. We shall ourselves be in readiness to contribute to the necessities of the organisation when the demand is made. I am sure we are acting wisely in adopting this resolution to-day.

Herr C. O. LANGEN (Germany): I should like to support this motion. I think this is a compromise which is entirely fair and just, and which does not alter the present Statutes very materially. I think the solution of this question a very good one, and I should like to urge the acceptance of the alteration.

Clauses 6, 7 and 28, as amended, were then carried.

The CHAIRMAN: Now that we have succeeded in getting over these difficulties, I think it is the proper time to move the adoption of the Statutes as a whole. They have been before you and amended, and I now ask you to agree to their acceptance, and thus put the coping stone to the organisation begun in Zurich last year.

Mr. J. DERBYSHIRE seconded the resolution, which was carried amid cheering.

After some remarks by Herr LANGEN with reference to the Entrance Fee and Levy already paid by Associations affiliated to the International Federation, the CHAIRMAN congratulated the Congress upon the firm establishment of their international organisation, and then moved the following resolution:—

“That all Associations which have paid an Entrance Fee on the basis of $\frac{2}{100}$ d. per spindle and a halfpenny per loom shall not be required to pay a Levy for 1905.”

Herr SVZ seconded the resolution, which was carried.

The CHAIRMAN mentioned that since morning the Committee had drafted the following resolution:—

“That this, the Second International Congress of Representatives of Master Cotton Spinners’ Associations, is of opinion that the baling and marking of American cotton is at present performed in an unsatisfactory manner, involving a serious loss in cotton; it therefore urges the Committee to take the question into consideration with a view to some action being taken to remedy the grievance complained of.”

Mr. T. HENTHORN: Would you like this meeting to express its opinion and take a vote in a formal way, or ought we to think over the matter and prepare ourselves for another meeting? Personally, I want to support the resolution to my utmost. I think the Committee have done wisely to bring up such a resolution. Of course, others of a stronger character, if you like, can follow.

The CHAIRMAN: I think the matter can be discussed to-day, but it can only be voted upon to-morrow.

The CHAIRMAN went on to say that they had discussed that morning the different regulations for the handling of cotton, and considered the grievances that were felt in this respect by the cotton spinners and the users of yarn. There were many other grievances, and if they went on discussing this subject they would have many more points to decide upon. He hoped they would have ample time to go on with the subject.

Continuing, the CHAIRMAN said: I see in the programme that the whole of to-morrow morning will be devoted to discussing damp in cotton, and I think any other grievance about the delivery of raw cotton may be discussed. If you will allow me, I should like to speak a few words about the regulations of the purchase of cotton. When I was preparing for this meeting I thought it would not be necessary to speak much about speculation in futures, because we have had suitable prices from the beginning of the year up to now, and I think we should devote all our time to the other part of the regulations I was speaking of. Last year, when cotton had reached an extremely high price, everyone was bound to find means to get a better supply of cotton and to get the price down. This year the matter has been somewhat otherwise. There is enough cotton, and not much difficulty in buying it.

Every grievance connected with the handling of cotton should receive full consideration now, and we should try to get all those alterations in the handling of the raw material which we could not get when cotton was scarce. But speculators, both in America and in Egypt, show that they can make disturbances whether the crop is small or large, and therefore I shall recall to your minds the remarks I made last year. You will, I trust, excuse me if I repeat myself. Such a matter cannot be dealt with in one year, or even in two years. When talking of cotton, one is nearly always compelled to talk on this matter, and the oftener we talk about it the clearer our views will get. The greatest difficulty is not the price itself, but the great differences in price that do not naturally follow the laws of supply and demand, but are governed by the uncontrollable action of individuals, and I think if we are going to do anything to guarantee satisfactory business we must start from this point.

It must be admitted that one or two men can, and do, disturb the whole business, but why can they do it? They cannot do it in any other commodity. And yet, we who know our trade, who understand cotton, who invest money in our industry, must abide by such unfair dealings. We must go back to the origin of the "future" business. The difficulty does not lie in the selling of the cotton for future delivery. Cotton must be sold for future delivery, the same as any other commodity. It is in the paper contracts where the whole difficulty arises.

We must acknowledge that the business of futures is necessary for the market at present. It became necessary because the American crop grew larger every year and men cannot handle large crops without getting some cover for them. It would be all right if such cover was found amongst the trade itself: the future market was really

intended for that. But the trade did not always furnish sufficient opportunity for the cover desired and therefore the outside speculator was drawn into the market. This constitutes an element that does not act according to the rules of supply and demand but according to sentiment, and is led by any man who is bold enough to assume the leadership. These leaders, who have usually very little money of their own to lose, create the disturbance in prices, and will go on creating them, so long as they are allowed. They only live by disturbing the market. They must see whether there was any possibility of coping with such a difficulty. Last year he said that the only real way of fighting gambling in cotton—he did not mean legitimate business—was to have a large stock of cotton in hand, but he was told it was not possible in practice, as the risk was too great. He still held, however, that if every mill connected with the International Federation would guarantee to take over fifty or a hundred bales of cotton for every 10,000 spindles at an average price they would not have to hoard up futures as a cover. As long as they dealt with futures they could not do away with gambling. He did not think they even wanted control of a million or half a million bales of cotton to safeguard themselves. He thought it would be enough if they secured 200,000 bales. He could not see any way of effectually dealing with gambling unless they had a certain amount of cotton in hand to tender. As long as the speculator took the risk of paper contracts he was the master of the market. No single sane person would have dealt with 250,000 actual bales, but speculators in America did not think much of 250,000 paper contracts, and as long as they held these paper contracts they ruled the market. Whom would they trust to do business for them? Would it be a big gamble in the name of all the spinners? He did not think so. He understood that the organisation was not so complete now as to have one man or body of men who could be trusted by the world. But the organisation would grow, and surely it would be possible to find honest men who could be trusted with such a responsibility. These were matters for future consideration. What he submitted was that if they wanted to do away with gambling they must hold a certain amount of cotton themselves.

He had another suggestion to make to them. There was one thing which he thought could be done at once. A great help in fighting the gambling of speculators was a good knowledge of the conditions of the market. One of the best things the syndicate he had spoken of could do would be to send out literature, and give information for the benefit of the spinner about the state of the crop, the size of the crop, and the market. There were plenty of people who had no other source of information than the American

information. They believed Sully, and they played his game for him. Since the reports of the American bureau had become more trustworthy, the operations of the speculators had been more difficult. They had derived their information from officials of the bureau, and he thought no better information could be obtained. The American statistics had improved year by year. Five or ten years ago no one believed the bureau reports. No one wondered when the estimate of the American bureau was two or three million bales out. In the last few years these estimates proved nearest to ultimate results. Could they not on this side follow the excellent example in making statistics on consumption, or would they continue to rely on the estimates of the speculators?

The work he suggested could be done by the International Federation. They could issue question forms to every member of the Federation and ask him how much cotton he had in stock, how much cotton he had to receive on contracts, and how much he wanted for the next six months. The inquiries and replies could be strictly private. He could sympathise with the view that they would not like others to know how much cotton any individual spinner had in hand. The inquiries could be conducted privately however, and only a summary published. They had had such an arrangement in his country for twelve years now, and it worked very well. The forms were numbered; no names transpired. They must not give the totals of each separate country, but the summary of all countries in the Federation, and then they could say with a certain degree of correctness how much cotton was in stock on any given date in Europe. This, in connection with the American statistics, would give them a perfectly clear view of the market, and he did not think that the American cotton gamblers would be able to play tricks on them if they had this knowledge.

He did not think the returns could harm anyone. The publication of the American statistics did not do the trade any harm. The more correct the statistics, the more they would help the trade, and the better equipped they would be to deal with the cotton gambling curse. They could then leave the "future" market altogether to the speculators. He did not see why his trade should be disturbed because another man wanted to gamble, and therefore he thought it high time to take action in some such direction as he had indicated. He did not want to move the adoption of any resolution, he only intended to give his idea on the matter, but he hoped, as they were in the heart of the cotton industry of Europe and of the world, where many trade difficulties had been overcome, that there would be found a way of meeting their present difficulties. They also looked to British pluck and energy, that over-

came difficulties which arose against the industry in former years, to fight against the present evils that disturbed their trade and did harm to the industry they had built up. The cotton industry was now spread over the whole world, and was not, as in former years, merely a Lancashire interest; but he felt sure if Lancashire would only take the lead, the rest will follow. It was only necessary to make these matters clear, and everyone connected with the trade would co-operate in taking such steps as were necessary to do away with this outside gambling, and with every difficulty that arose from any illegitimate source whatever.

Mr. A. H. DIXON said he was afraid it was not possible for all the Chairman had advocated to be attained, but he thought it was in the power of that International Committee to do some real good for the industry. The question of "futures" was one that had two sides—one side the gambling side, and the other the side that was necessary, not only to the cotton spinner, but to the people in Alexandria and New York. Speaking only of Alexandria, because that was the market of which he had the most experience, he would say that the regulations in that market were the most to blame for the disasters that had happened in past years.

If they would allow him he would explain what he believed to be the great difficulties, and afterwards what he believed to be the right way of dealing with them. To begin with, the tendering was much too high and too restricted. Moreover, they absolutely refused to accept pressed bales. When he was in Egypt a year ago he asked the reason, and was told that the market would not accept pressed bales because they were afraid of bale packing. They said that they had to deal with certain people in Alexandria who might not have the same high sense of honour as the merchant had, and owing to bale packing they could not accept these bales. The tenders were simply a premium to the gambler, and they were a menace and hindrance to the legitimate trader. He was aware that at this moment in Alexandria this question was very much in evidence. The remedy lay with the Alexandria Produce Association, and his suggestion was that the International Committee should draw up a special recommendation to the Alexandria Produce Association asking them as far as possible to alter their regulations so as to be of assistance to the trader who wished to cover his stock or buy futures, and put a stop to the operations of the gambler. Monte Carlo was the proper place for the gambler. He thought the discussion in so representative a Congress would result in much good being accomplished.

M. le BLANC (Comité français de la filature de Coton, Groupe du Nord), read the following paper :—

The market of Alexandria has now for several years been attracting the attention of the cotton world by the violent fluctuations which take place in it, and which render transactions very difficult in the nature of regular trade in that place, outside those induced by a speculative spirit.

At all times, shipping merchants or spinners, who are desirous of laying in a supply of good cotton, have been obliged to make their purchases during the arrivals of the first crop, in October, November and December. But to do that one is obliged to buy without taking into account the rates which are ruling, without concerning oneself whether they are in relation or not to those of the manufactured products, without troubling oneself whether they are likely to rise or fall in the future.

One must, therefore, think of guarding against a future drop, against an absence of demand on the part of spinners, if the question be of a merchant, against underselling of yarn, when a spinner is concerned; for it is impossible, both for the one and the other, to run the risk, sometimes formidable, of a drop in prices; and to attain this end, there is an operation which is quite rational and which has been now for many years in practice for American cotton, it is by a term-bargain or dealing in "futures."

This is an operation which can easily be done in the Alexandrian market, in which there exists what is called a contract-market.

The spinner is thus able to secure his supply, and to guarantee himself against a possible drop in selling in the market of Alexandria the counterpart of his purchases of raw cotton which are not sold in yarn, and, on doing this, he leaves in store at Alexandria the cotton which is delivered to him in steam-pressed bales to wait until the day when he will redeem his contracts and get his cotton sent to him.

All would go well if the consumption took place according to the forecast at the beginning of the year, but for one cause or another, fire, breakdown, stoppage through accident, through strike or short time, transformation of the demand through its turning in the direction of other kinds of goods, this supply becomes useless and an attempt must be made to realise it.

Let him deliver his cotton to feed his sale, you will tell me; indeed, this is very easy to say, and, if we were at New York, at Liverpool or at Havre, it would be almost as easy to do. But such is not the case at Alexandria, where cotton can only be delivered against the sale of contracts if this cotton has not been steam-pressed, and if it remains within the too narrow limits of the qualities admitted in deliveries of contracts.

Here, then, we have our spinner, a seller of contracts and a holder of a like quantity of goods, unable to make use of these goods to feed or meet his sales, and obliged to seek a buyer for his actual cotton and to re-buy himself his contracts, thus passing under the Caudine Forks of the speculators.

The latter, indeed, are not without knowledge of the composition of the crop, they know that in a crop of 6,000,000 cantars, like that of 1904-1905, the following estimate can be made:—

The production of Upper-Egypt	...	...	1,000,000 crs.
That of Joannovich and Abbassi	...	...	800,000 crs.
And that of Metafifi	...	...	4,200,000 crs.

They know that of the 4,200,000 crs. Metafifi there are about 1,200,000 crs. of qualities below Good Fair, and that of the 3,000,000 crs. which remain, it is necessary to take into account everything which is sold in the spinning trade and forwarded in the first months of the year, and cottons superior to Good to Fine which are only delivered in exceptional cases against contracts.

They have taken into account the quantities pressed by steam which figure in the stock, and the proportion of cotton not deliverable, such as inferior cottons, Upper-Egypt or other kinds, and they have for a long time occupied themselves with the purchases, knowing perfectly well that their buyers of that time would be compelled to become their purchasers of to-day and that they could strangle them at their ease.

What has happened in May is a new proof. Of a stock of about 1,400,000 crs. at Alexandria, 200,000 to 250,000 only could be delivered to meet contracts; now this quantity should represent almost the total of the Metafifi cottons in hydraulic bales, of deliverable classifications.

The speculators who are at present holders of these cottons are, therefore, until the next crop, absolute masters of the market, and it does not appear doubtful that they will lose the power, which the defective conditions of the Alexandrian market have allowed them, in order to secure themselves, without troubling themselves about the considerable damage they will cause cotton spinners in Egypt.

That is a situation that should be put an end to in the interest of regular business, and it is with this aim that we put on record the following suggestion:—

The delivery of steam-pressed bales shall at least be authorised under the same heading as cotton in bags.

That the standard of cotton to be delivered against sales of contracts should be extended.

That under the category of deliverable cottons, those of the cottons of Upper Egypt shall be brought, which can be assimilated to the cottons of the Delta, otherwise a penalty proportional to the difference in quality shall be stipulated.

M. JULIEN le BLANC added: We would urge the English Delegates to appeal to their Government to take steps to put an end to a speculation which is productive of a deplorable condition of affairs to the entire Egyptian branch of the cotton industry.

Mr. E. STANSFIELD said that for Alexandria speculators to exclude pressed bales that could not be tendered against contracts was ridiculous. With regard to gambling, he thought outsiders should have nothing to do with the cotton trade except indirectly. Then there would be less gambling in cotton. Another point was, at present, if a person did not complete his sale of cotton on the stipulated date, a penalty of a halfpenny per pound was put on. That was unjust, and

should be abolished in the futures market. The real remedy, he thought, was to increase the area of production. When cotton was grown universally, such supplies would be available that no one could run up cotton from fivepence to ninepence. He hoped the British Cotton Growing Association would continue to advance, because its progress would be to the advantage of the whole world.

Mr. J. R. BYROM (England) said he thought a great deal of inequality would be done away with if the area from which their arbitrators were drawn was increased. He did not believe they would ever get what they wanted in the case of arbitrations so long as in Liverpool no one was allowed to arbitrate unless he was a member of the Cotton Association. Why should not a spinner be called in to arbitrate between a merchant and a spinner? To make the arbitrations fair was an important matter, and might be added to the suggestions they had had that afternoon.

M. ERNST LANG (Switzerland): I am informed by the firm of Mohr & Fenderl that, beginning with next season, Upper Egypt cotton will be ready for delivery on contracts for Egyptian cotton. This decision of the Alexandria Committee was taken on the initiative of M. Fenderl.

Mr. SAMUEL S. DALE (United States) continued the discussion, and then read the following paper:—

The cotton industry includes every operation from planting the seed to making the garment. All branches are bound together, and while one may for a time prosper at the expense of the other, in the long run all stand or fall together. It may be that our nearness to the cotton fields has made us realise a little more clearly the community of interest between planter and manufacturer, but the spinners of all countries have grown to look upon the cargoes of cotton that come to their mills as upon the rain that falls from the heavens. It is, however, the finished product of the planter, as yarn is that of the spinner; cloth, that of the weaver.

It is customary to ascribe the scarcity of cotton last year to a short supply, but the fact is, it was due rather to an excessive consumption by the mills. The spinners in all countries had gone on, year after year, building cotton mills without a thought of how they were to be supplied with cotton. A demand in excess of the supply sent cotton to 15 cents a pound, and prices as high or even higher will again result under like conditions. The remedy is, to use less or produce more. To use less means to stop civilisation. The only reasonable remedy is to produce more. How is this to be done?

Nothing is easier than to predict the limit of the American cotton crop, unless it is in being wrong in such predictions. A year ago it was predicted that America had reached her limit of production, but the Southern planter took off his coat, rolled up his sleeves and gave the

world more cotton last season than was grown in the whole world seven years ago. Instead of prophesying I want to call your attention to some facts. The cotton belt of the South has an area of 650,000 square miles, almost as large as France, Germany, and Austria-Hungary combined, and yet the area under cultivation is but one-third the size of Prussia.

So far as is known, nature has created no better conditions for raising cotton than in the Southern States. There are vast tracts of rich land, the required amount of rainfall to water the ground, the proper amount of moisture in the air, and sunshine to give the light and heat required in the growing season. There may be a limit to the cotton raising possibilities of the South, but it is not yet in sight. All that is necessary is strong arms and willing hands to plant the seed and gather the crop.

To the spinners of Europe it makes no difference where their cotton is grown, so long as they get enough of it. As well in Texas as in Togo; in Mississippi as in Madagascar; in Louisiana as in Lagos. This thought of danger in a cotton supply from America, simply because it is from America, is an economic fallacy. It may surprise you to know that Lancashire is nearer to Texas than is Massachusetts. Just before I left Boston the freight on cotton from Texas ports to Manchester was 95 cents per hundred, and to New England \$1.00 to \$1.10 per hundred. Any material change in these conditions is made practically impossible by the greatest free trade document in existence, the Constitution of the United States, which forbids duties on exports.

Labour is scarce in the South, but plentiful in Europe. The population of the entire cotton belt is but 15,000,000 less than that of Switzerland, Holland and Belgium. The great need of the South is more people. A million emigrants a year are leaving Europe for the United States, and yet not five thousand of them reach the South where labour is needed to supply Europe with cotton. They crowd into the already overcrowded cities of the North, when they might become prosperous and independent planters in the South. The bare statement of this condition points to the solution of the cotton problem. When the cotton spindles do not supply the looms you build more spinning mills. When the cotton fields do not supply the spindles the remedy lies in sending your surplus labour into the fields to raise cotton.

It is the duty of cotton spinners to convert cotton into yarn along the line of least resistance. You do this when you build a mill in the most favourable location, equip it with the most improved labour-saving machinery and processes, and run it at the highest efficiency. You buy in the cheapest market and sell in the dearest. When all that has been done you have discharged your responsibility to your stockholders, to society and to yourself.

The same policy must be followed in the production of cotton, and the cotton producing capacity of the South is so far from exhaustion that efforts to promote cotton raising in other countries under unfavourable conditions must be classed as experiments for the benefit of some remote posterity using cotton at thirty cents a pound.

The cotton supply may be classed with the coal and iron supply as involving problems of direct concern to the consumer of the distant future. The burden of their investigation and solution should be borne by the State, not by the cotton trade of to-day.

The spinners of America have as much interest as those of Europe in promoting cotton cultivation in Africa, and in both cases the interest is too remote to be classed as practical.

It may be worth while to experiment with the growing of cotton in unfavourable climates; to introduce artificial irrigation; to build railroads into the interior of Africa; to distribute free seed and farming tools to the natives; to hire experts to teach them how to till the soil; to guarantee them a minimum price for their cotton; to instal ginneries and presses; to secure reduced freight rates from the steamship companies; to spin the product separately into yarn and weave it into cloth to determine its commercial value, but let all these things be done as scientific experiments and the expense be borne by the State in behalf of a remote posterity, while the spinners supply their mills from the South where cotton is grown at the lowest cost. The fear sometimes expressed that the United States will use the entire American crop is wholly imaginary. With free trade in cotton, the world's cotton crop belongs to those who will pay the highest price. An increase of the supply benefits alike the spinners of Old England and New England, whether it comes from Carolina or anywhere else.

Increasing the labour supply of the South will not only give the manufacturers plenty of good cotton, but it will also reduce the evils of speculation. The American spinner has the same interest as the European manufacturer in preventing violent and artificial fluctuations and the cornering of the supply. To eliminate speculation entirely is impossible. We are all speculators, and the cotton crop offers unexcelled opportunities for the exercise of the gambling instinct, which is part of human nature. The cotton crop is worth untold millions and the possibilities of gain from successful speculation are unlimited. The size of this crop is dependent upon a combination of many circumstances that vary from day to day, even from hour to hour. It depends on the approach of spring time, on the sunshine and the rainfall, on the ravages of insects and frosts in the fall, on the labour supply, the demand for goods, wars and rumours of wars, and until human nature is changed the cotton speculator will be with us. The evils of speculation can be practically eliminated, however, by increasing the supply of cotton from the South, and Europeans have that remedy in their own hands.

The warehousing of cotton has been proposed as a means of equalising the supply and the price of cotton. This plan has recently been worked out in detail by Mr. D. A. Tompkins, of Charlotte, S.C., a copy of whose circular on the subject I have here. The success of such a plan depends upon the co-operation of the spinners, in gaining their confidence in the reliability of the certificate that may represent the quantity and quality of cotton at some distant point, and it is for this reason that your careful consideration of the plan is desirable. A plan to improve the methods of marketing cotton would naturally include the improvement in packing it for market, and here again the interests of European and American spinners are alike.

The CHAIRMAN then moved the adjournment of the sitting, which was at once agreed to.

THIRD DAY'S PROCEEDINGS,

WEDNESDAY, JUNE 7th.

CHAIRMAN: BARON COSTANZO CANTONI.

The Congress resumed its sittings on Wednesday morning, June 7th, Baron COSTANZO CANTONI (Italy) presiding.

The CHAIRMAN, after thanking the Congress for the honour paid to him by his selection to preside that day, said he wished to take that opportunity of saying that during the whole time, about three years, the English spinners and manufacturers and the English operatives had been suffering from the necessity of short time, he had felt the utmost sympathy with them. He congratulated the English spinners of American cotton on the improved conditions of business, and expressed the hope that the Egyptian section of the trade would soon be equally favoured.

The SECRETARY (Mr. John Smethurst) read the Minutes of Tuesday's proceedings.

The Minutes were adopted as read, on the proposition of the CHAIRMAN, seconded by Mr. J. DERBYSHIRE (England).

DAMP IN COTTON.

Mr. H. W. MACALISTER read a paper on "Damp in Cotton," prepared by the Cotton Committee of the Federation of Master Cotton Spinners' Associations, as follows:—

During comparatively recent years the minds of cotton spinners have been considerably exercised by the question of Damp in Cotton, but as long ago as January, 1889, we find that the United Cotton Spinners of that date passed the following resolution:—

"That in conformity with the recommendation of the Damp in Cotton Committee, a levy be made upon the trade at the rate of sixpence per 1,000 spindles, for the purpose of carrying into a Court of Law some suitable case of excessive damp, and testing as to the right of Cotton Spinners to recover damages in such case."

At the commencement of the current cotton season, so many serious complaints were brought before the Council of the Federation of Master Cotton Spinners' Associations, that a Cotton Committee was appointed to enquire into the subject, with a view to devising means to put a stop to this very serious evil.

The following is a list of some of the more serious cases of excess moisture which have been examined and reported upon by the Manchester Chamber of Commerce Testing House:—

DAMP IN COTTON.

		1	2	3
Total moisture	...	13.25%	15.40%	11.43%
Absolutely dry weight	...	86.75%	84.60%	88.57%
Regain at 8½%	...	7.37%	7.19%	7.53%
Correct invoice weight	...	94.12%	91.79%	96.10%
Excess moisture	...	5.88%	8.21%	3.90%
		4	5	6
Total moisture	...	14.71%	15.00%	12.28%
Absolutely dry weight	...	85.29%	85.00%	87.72%
Regain at 8½%	...	7.25%	7.22%	7.45%
Correct invoice weight	...	92.54%	92.22%	95.17%
Excess moisture	...	7.46%	7.78%	4.83%
		7	8	9
Total moisture	...	13.33%	10.60%	15.50%
Absolutely dry weight	...	86.67%	89.40%	84.50%
Regain at 8½%	...	7.36%	7.60%	7.18%
Correct invoice weight	...	94.03%	97.00%	91.68%
Excess moisture	...	5.97%	3.00%	8.32%

A communication has also been received from a firm in Italy, through the Secretary of the Manchester Cotton Association, stating that a lot of 100 bales of American cotton imported via Genoa, which the seller's agent examined at the factory, contained over 12½% of moisture, some of the bales being found on opening to contain 50 lbs. and 60 lbs. of unmerchantable cotton.

The following instance is one in which special care was taken to have an exhaustive examination and test made wholly under the care of the Manchester Testing House Officials.

Their report is as follows:—

Royal Exchange,

Manchester,

October, 1904.

"In accordance with your instructions we visited your mill on the 19th inst., and weighed and sampled 42 bales of cotton. The samples were taken from the top, intermediate and middle parts of the bales, and were conveyed here in air-tight tins.

	Lot 1.	Lot 2.	Lot 3.
13 bales	14 bales	15 bales	
cwt. qr. lb.	cwt. qr. lb.	cwt. qr. lb.	
54. 2. 20.	63. 3. 24.	69. 1. 26.	
Total moisture	13.30%	12.50%	13.90%
Absolutely dry weight	86.70%	87.50%	87.00%
Regain at 8½%	7.37%	7.43%	7.39%
Correct invoice weight	94.07%	94.93%	94.39%
Excess moisture	5.93%	5.07%	5.61%
Equal to a loss per bale in excess of a normal moisture of 8½% over absolute dryness respectively of	26.60 lbs.	24.69 lbs.	26.90 lbs.

an average of 26.07 lbs. per bale upon the net weight of the bales.

In addition to the above loss shown by the Testing House report it is only right to add that the loss in weight which took place in the gross weight of the cotton, viz.:—between the weight of the bales as weighed in Liverpool and the subsequent re-weight of the same bales by the Testing House Official (after making due allowance for bands removed, and samples taken out by the sellers when investigating the complaint) was 189 lbs. or 3·31 lbs. per bale."

The allowance awarded by the arbitrators on this lot of cotton was 10 lbs. per bale, whereas the average loss to the spinner was as shown above, 26·07 lbs. per bale, according to the Testing House report, *plus* the loss in weight between the first and second weighings.

Assuming the weight of a bale of American cotton to be 500 lbs. net, an excess of 5% moisture adds to the cost of the cotton to the spinner

on 6d. per lb.	...	·315d. per lb.
5d. "	...	·263d. "
4d. "	...	·210d. "

At to-day's price, say, 4·50d., an excess of 4% adds ·187d. to the cost.

4·50d.	3%	·139d.	"
4·50d.	2%	·091d.	"

With the view of obtaining the assistance and co-operation of the Liverpool Cotton Association, the Federation Cotton Committee, on the 17th Nov. last, waited upon the Directors of the Liverpool Cotton Association and laid before them for their consideration the serious loss which the trade was suffering by reason of excessive moisture, and also the fact that there was no method in use of scientifically assessing the amount of excessive moisture in cotton, and, further, that when cotton was found to be more than usually damp, the allowances made by arbitrators were in many cases totally inadequate to cover the actual loss.

The Cotton Committee suggested that endeavours should be made to establish a scientific method of ascertaining the amount of excess over normal moisture, but the Directors of the Liverpool Cotton Association, in their reply, stated that their "Appeal Committee on Damp," after careful consideration, "are strongly confirmed in the opinion . . . that the adoption of a scientific test for the adjustment of claims for damp was commercially impracticable; . . . that damp in cotton, excessive or otherwise, was caused by the weather, and that no human effort could control it." "They were also of opinion that no seller of cotton, in America or anywhere else, would submit to sell subject to a basis of claim which arbitrarily fixed the amount of moisture in cotton of various growths and crops."

The Federation Cotton Committee, in their reply to the Liverpool Cotton Association, wrote that they could not seriously accept the conclusions placed before them, and stated that the object of the Federation Committee was not to obtain any arbitrary fixture of rules which might be unfair to sellers, but, on the contrary, to induce the Directors of the Liverpool Association to adopt regulations under which differences between sellers and buyers might be equitably adjusted, as the Committee was of opinion that sellers in America or elsewhere could not in fairness refuse to agree to rules which were equitable. They further contended that the present Liverpool Association Bye-Laws were not framed to deal equitably with the

question of *internal* moisture in bales of cotton; for instance, the Liverpool Cotton Association Bye-Law 25, Section 6, Sub-section F, reads as follows:—

“If in the opinion of two qualified persons cotton turns out at time of delivery to be damp or wet, and if such arbitrators consider an allowance of at least 10 lbs. per bale of 480 lbs. average weight if American cotton to be due thereon (and this shall be the ratio in cases of damp occurring in growths other than American), the buyer shall have the option of closing the contract at the market price of the day, subject to the right of appeal by the seller.”

This forms the basis under which arbitrations for damp are conducted, and the Liverpool Appeal Committee have admitted that there have been cases of arbitration under this rule in which about 10 lbs. per bale should have been allowed, in which the allowances had not been sufficient, and the instance which we have above given (the Testing House report on 42 bales) is a case in point which confirms that conclusion.

Bye-Law 25, Section 1, Sub-section 1 (a), reads:—

“All cotton shall be warranted as represented,”

and we can hardly suppose that any seller whose cotton was excessively damp in the bales would contend that the sample upon which he offered the cotton for sale *could* possibly represent excess moisture in the bale. In earlier years American cotton was frequently weighted, sometimes excessively, with sand, but this being a very apparent adulteration, which was usually represented in the selling sample, the buyer of spot cotton was able to protect himself and this method of adulteration has practically ceased.

The rules of many of the American Cotton Exchanges deal specifically with this malpractice, and their enforcement has no doubt contributed to this beneficial result.

Excess moisture in cotton is only another means of adulteration—much more difficult to detect and to deal with—which equitable rules would eradicate.

The Federation Cotton Committee suggested a further conference with the Liverpool Cotton Association, to discuss the question and the existing rules dealing with the subject of damp in cotton, to which they received a reply:—

That “as the Directors of the Liverpool Cotton Association are absolutely convinced that the dampness in question is the result of atmospheric causes, which are beyond control, such fundamental divergence of opinion renders all discussions at present useless.”

We trust that the Liverpool Cotton Association, notwithstanding the strong opinion which its Directors have expressed as to the cause of excessive moisture, will take measures to institute enquiries on the subject, for the benefit of the section of the trade which it claims to represent.

We have examined copies of the Rules of a number of American Cotton Exchanges, viz.:—those of Galveston, New Orleans, Memphis, Savannah, and it is most remarkable that, with the exception of the last-named, none of them appear to mention cotton “ginned while damp.”

GALVESTON.

Which under Rule 4, *Allowances and Rejections*, Section 1 reads:—
 “Seedy or fraudulently packed cotton shall be rejected.”

Defines mix-packed cotton, but makes no mention of cotton damp-packed or water-packed.

Under Rule 10, *Supervision and Inspection*, Section 9 provides:—

“That the Chief Supervisor and Inspector and his assistants shall keep a record of the weather; also of the condition in which cotton is delivered to the various vessels. They shall also keep a record of the condition in which cotton is taken on board, in a wet or dry condition; and, if wet, they shall specify whether the same was received wet or became wet by being exposed to rain upon the levee or being rolled through the mud. They shall make daily reports embodying all particulars, which reports shall be kept on file, and shall be entered up in a book to be kept by the Chief Supervisor and Inspector.”

This only appears to refer to external damp, and or country damage.

NEW ORLEANS.

SPOT COTTON, *Weighing and Re-Weighing. Causes for rejection.*

Rule 4:—

“The buyer shall have the right to reject all seedy or falsely packed or mixed-packed or re-baled cotton, unless it has been sold as such”

Rule 16. *Allowance for wet or damp cotton:—*

“In all cases where wet or damp cotton is tendered for delivery and the weigher and re-weigher cannot agree as to the proper allowance to be made for the same, the buyer's re-weigher shall have the right to demand that such cotton shall not be weighed until it becomes dry.”

SPOT COTTON. Rule 18—*Reclamations* } Dealing with falsely
 F.O.B., Rule O, Sect. 2:— } packed cotton.

Reads—

“Falsely or fraudulently packed cotton shall be defined as follows:—Such bales as may contain any foreign substance, water-packed bales, or bales containing damaged cotton in the interior, without any indication of such damage upon the exterior of the bale; also such bales as are plated, *i.e.*, composed of good cotton upon the exterior and decidedly inferior cotton in the interior of the bales, in such manner as not to be detected without opening the same.”

Free on Board Rules. Rule N., Section 2:—

“The f.o.b. seller shall guarantee the gross landing weight to be within one per cent. of the gross invoice weight”

Levee (Quay) Inspection Rules. Daily Reports. Rule 4:—

“The Chief Supervisor and Assistant Levee Inspectors shall keep a record of the weather, also of the condition in which cotton is delivered to the various vessels; they shall also

keep a record of the condition in which cotton is taken on board, specifying whether the same was taken on board in a wet or in a dry condition, and, if wet, they shall specify whether the same was received wet or became so by being exposed to rain upon the levee, or by being rolled through the mud ”

Skidding Receipts by Steamboats. Rule 6:—

“ Steamers landing cotton (*i.e.* from interior points of shipment) on the levee beyond the wooden wharves shall be required to place the same upon skids, so as to prevent its coming in contact with mud or water, and it shall be the duty of the Chief Supervisor and of his Assistants to report all violations of this rule.”

Certificate of Cotton unfit for Shipment. Rule 11.

“ In any case where cotton has been taken on board of a vessel in condition unfit for shipment, any shipper by said vessel shall receive, if he so requires, a special certificate from the Exchange, setting forth the facts of the case; said certificate to be verified by oath or affirmation of the Inspector in charge of said vessel. Shippers requiring special certificates shall pay all expenses incurred under this rule.”

MEMPHIS COTTON EXCHANGE.

Official Rules and Regulations governing the Sale and Transfer of Cotton in the Memphis Market, November 22nd, 1901.

Rule 6:—

“ All seedy, mixed, fraudulently packed and damaged cotton may be rejected. . . . ”

Rule 17:—

“ All cotton that is stored by the factor on the streets, or not under roof cover, shall be required to be thoroughly protected by tarpaulins and by the use of skids sufficiently large to protect the cotton from mud and water, and to allow of the passage of air underneath.”

SAVANNAH.

General Rules. Rule 8:—

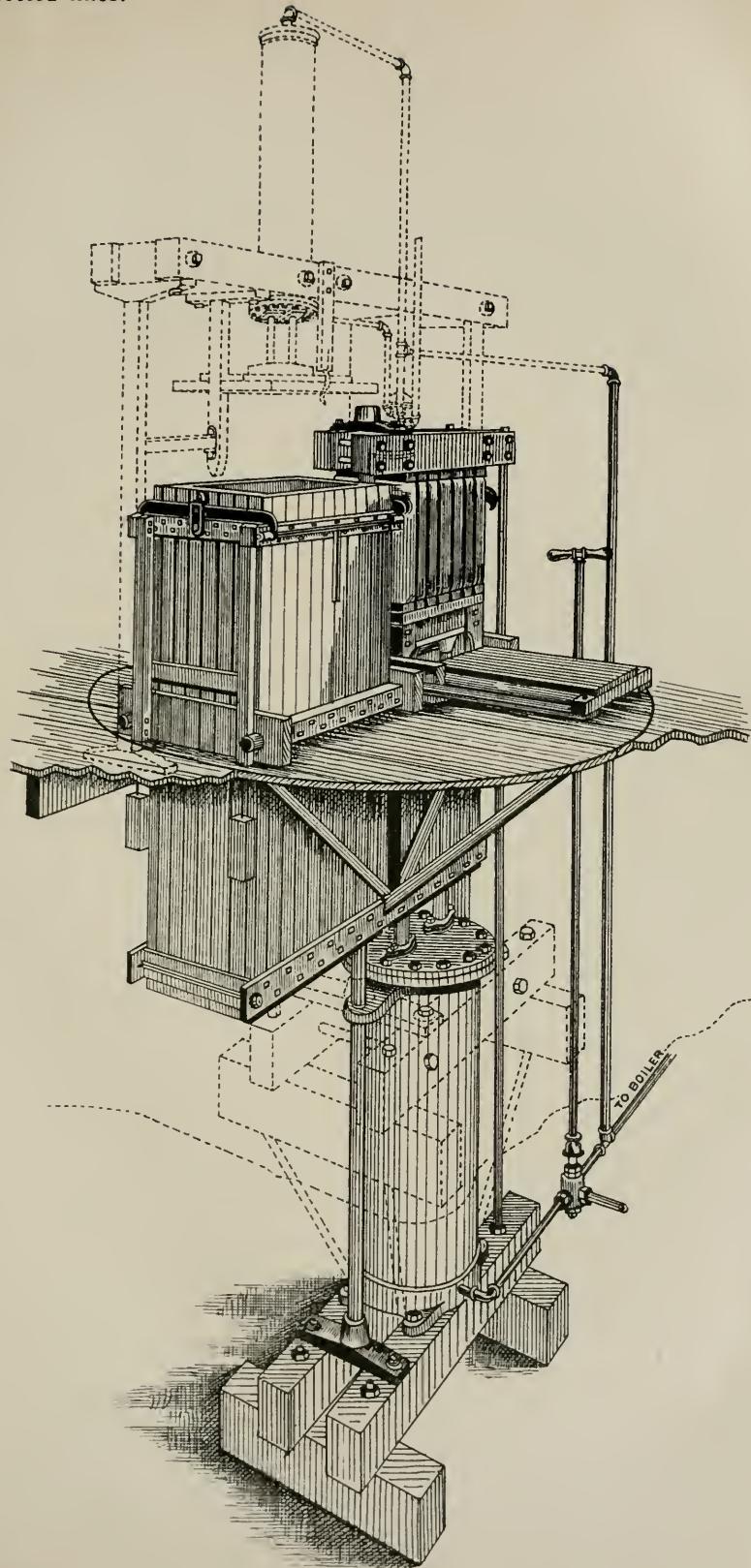
- (a): “ In cotton tendered for delivery, buyers shall be entitled to reject, at their option, any bale which is light weight, gin cut, seedy, cock-spurry, mixed-packed, damp-packed, water-packed, damaged, or which contains any foreign substance, or is covered with bagging which could injure the cotton, or which is in unmerchantable order.”
- (e): “ Any bale containing cotton ginned while damp, shall be deemed damp-packed.”

F.o.b. Rules. Rule 105 (a):—

“ Cotton sold f.o.b. shall be sold either on class and weight guaranteed at port of discharge. . . . ”

COTTON BALE PRESS

Steam Packer is shewn
in dotted lines.



F.o.b. Rules. Rule 107 :—

“When cotton is sold f.o.b. under terms of Rule 105 (a), it shall be considered as subject to arbitration in Liverpool or Bremen.”

F.o.b. Rules. Rule 118 :—

“In case of transactions under terms of Rule 105, paragraph A, the buyer is at liberty to ship the cotton to a European port, for weight settlement there if shipped to a port, then weights shall hold out within one (1) per cent. gross landing weight, against gross invoice weight, and in case the loss in weight on any lot exceeds two (2) per cent., as compared with invoice weight, the buyer shall be entitled to claim from the seller the loss in ocean freight, which the loss in weight in excess on one (1) per cent. may involve.

Speaking generally, therefore, it will be seen that the buyer of cotton in the cities named, under the rules of the above Cotton Exchanges, appears to be protected in the matter of external damp, country damage, etc. Only one, however, of these Exchanges specifically refers in its rules to cotton ginned while damp, viz., Savannah.

Evidence has, however, lately come before us that this question of excessive moisture in cotton is beginning to impress itself upon the minds of business men in the cotton-producing States, for the following circular has been issued by the Little Rock (Arkansas) Board of Trade, on the subject :—

COPY.]

LITTLE ROCK BOARD OF TRADE.

IMPORTANT NOTICE.

Little Rock, Ark.,

October 10th, 1904.

To the Cotton Growers, Ginners and Shippers.

“Though it is yet early in the season, the cotton buyers of Little Rock, and those in Little Rock Territory, are confronted by conditions that require proper, prompt and energetic action.

In the face of an excessively dry September, there are numerous complaints as to the dampness of cotton and the heavy loss in weight. Many bales have been received here by buyers that were water-packed or steam-packed. In one instance an entire carload has been rejected for this cause, and the cotton is in an unmerchantable condition.

One expert ginner, who is using steam press and steam trumper, explains that by slight carelessness the steam might escape, and thus dampen the cotton in the box. Whether this be so, or whether water or steam is allowed to enter into the bale intentionally or unintentionally, the fact remains that such cotton is improperly baled and liable to damage, and even when not damaged will shrink in weight. The innocent purchaser is paying for water and should be protected. The cotton, upon arrival in Little Rock, is weighed and inspected by expert and trustworthy weighers, and the Little Rock buyers make claim for loss in weight and irregularities on the parties they buy from.

In placing these facts before you, we desire to ask your co-operation in assisting us to remedy this evil. To the credit of our State, there has been a gradual diminution in the matter of false packing of cotton and other irregularities. Arkansas cotton enjoys a high reputation in the markets of the world, and we ask every one interested in the cotton trade, from the grower to the exporter, to exert his influence in furnishing straight packages and proper weights to the spinners, thereby building up not only the cotton-growing industries of the State, but protecting its good name.

We desire to call your attention to Rules 6, 13, 14 and 15, of the Little Rock Board of Trade, governing the sale and transfer of cotton, which are as follows:—

Rule 6.—All seedy, mixed, fraudulently packed and damaged cotton may be rejected, and cotton sold by samples must be delivered accordingly, unless rejected for causes above stated.

Rule 13.—All f.o.b. cotton for shipment to Little Rock is to be weighed as soon as practicable after its arrival, and in case of any discrepancies between invoice weight and re-weights, the shipper is to be furnished promptly with statements of any such discrepancies, for which he is liable. However, the seller has the right to have the cotton weighed at his own expense within forty-eight hours from the time claim is made.

Rule 14.—Country damaged cotton, *i.e.*, cotton damaged by water, mud, or any way unmerchantable or in bad condition, will be put in order at the expense of the shipper.

Rule 15.—Where transactions in round lots are made, without reference to samples, the buyer has the right to reject all fraudulently packed cotton, in the same manner as described in Rule 6.

These rules are practically the same as are in vogue in all the larger cotton markets of the world, and will be strictly adhered to by the members of the Little Rock Board of Trade."

As further evidence of damp-packing, we find, curiously enough, that the manufacturers of the Thomas Gin Compress, of Little Rock, Arkansas, publish certain testimonials relating to their machinery, from which we give the following extracts:—

ONOWAY SCOTT,
Merchant and Planter.

Scott, Ark., December 18th, 1904.

THOMAS COMPRESS CO., Little Rock, Ark.
Gentlemen,

We have ginned 800 bales of cotton and pressed it with your Folder, and find a great improvement in it over the old steam packer, which *let more or less water leak into the bales, and in your Folder this trouble is entirely done away with*, and it also folds the cotton very nicely and saves labour and power.

Yours truly,

W. E. CHAPEL, Manager.

H. McMURRAY & Co.,
Cotton Buyers.

Little Rock, Ark., December 14th, 1904.

Dr. A. D. THOMAS, Little Rock, Ark.

Dear Sir,

After seeing your Folder in operation, it gives me great pleasure to state that I consider it the best device on the market for putting cotton into the press box. From a cotton buyer's standpoint, I especially recommend the use of your Folder, *from the fact that it does away with all possibility of water-packed cotton, which is frequently the case where the cotton is put into the box by a steam tamper. . . .*

Wishing you the greatest success,

I am,

Yours very truly,

W. H. McMURRAY.

LITTLE ROCK BOARD OF TRADE.

Little Rock, Ark., December 14th, 1904.

To whom it may concern.

I have made a personal inspection of the Thomas Cotton Press Folder while in operation, and cheerfully recommend its use as a labour-saving machine, as well as for its many other advantages in the making of a better commercial bale, *avoiding moisture and steam in the baling.*

Respectfully,

AD. HAMBURG,

Chairman of the Board of Trade Cotton Committee.

T. H. HUTCHINSON,
Cotton.

Little Rock, Ark., December 14th, 1904.

Dr. A. D. THOMAS, Little Rock, Ark.

Dear Sir,

I have been watching the development of your Folder for putting cotton in the press box from the time you commenced on your first machine. . . . Being in the cotton business myself, I can see a great saving of money and annoyance to all cotton buyers, *from the fact that there is no danger of water-packed cotton where your machine is used, which is frequently the case where steam cylinders are used for putting the cotton into the press box. . . .*

Yours very truly,

T. H. HUTCHINSON.

Cotton can only be passed through the gin when in a comparatively dry condition, as if too damp the fibres collect upon the saws, and frequent fires then occur from friction.

A correspondent writes us as follows:—

“ Referring to the circular issued by the Little Rock Board of Trade. My personal observation confirmed the need of such a

circular, as the steam trumper, as used in gin houses, is undoubtedly a constant source of added moisture before the bale is pressed, depending, of course, upon the good or bad condition of the stuffing box."

Mr. Christopher P. Brookes, of New Bedford, Mass., in a paper read before the New England Manufacturers' Association, last September, quotes the result of some tests for moisture in cotton made by Mr. Howland some years ago, which is given below:—

NORTH AMERICAN.

Variety of Cotton.	Percentage of Moisture,		
	Maximum.	Minimum.	Average.
Texas ...	14.8	6.9	9.2
Orleans	9.9	7.8	9.7
Memphis	9.8	7.1	9.4
Sea Island	9.9	7.4	9.6
Savannah	16.2	10.7	13.8
Norfolk	10.3	8.4	9.4
Florida	8.9	7.2	8.7

SOUTH AMERICAN.

Maceio	...	8.1	8.1
Paraiba	...	8.3	8.3
Brazil ...	...	11.8	7.3
Peru ...	...	9.8	7.5

EGYPTIAN.

Ashmouni	...	9.5	6.8
Gallini	...	10.8	7.1
Brown...	...	8.7	7.8

INDIAN.

Surat ...	...	7.7	6.2
Dhollerah	...	8.1	6.4
Bengal	...	8.2	8.2
Tinnivelly	...	7.9	7.9

We think these figures will probably fairly represent the experience of consumers of cotton at the present time.

Many spinners here have no doubt found by experience that the cotton which loses most weight comes from the Eastern Cotton States.

We think that no stronger evidence could be produced for the necessity, on the part of all Cotton Exchanges, to establish rules which will act as a deterrent to the *damp-packing* of cotton.

In other trades, notably in those of wool, silk and wood pulp, it has become an established custom to buy and sell those commodities upon an agreed-upon standard of moisture, and we see no insuperable difficulty to the establishment of a similar method of adjusting disputes in cases of excessive moisture in raw cotton.

In our opinion, however, the simplest plan in the first place is to root out the evil at its source, which appears from the above evidence to arise at the ginning presses, and this duty primarily falls upon the shoulders of local Exchanges throughout the cotton-producing States. We trust that the International Committee will exercise its powerful influence with the respective National Local Associations and Cotton

Exchanges which its members represent, to organise a code of Rules and Regulations which shall be equitable as between sellers and buyers, dealing specifically with the assessment of claims for excessive moisture in cotton, with the object of establishing their universal adoption. In order to assist in the accomplishment of this very desirable end, we think that the opinion of this Congress, strongly expressed, would carry very great influence with the authorities of the commercial centres referred to.

Mr. MACALISTER proceeded:—As further evidence of what I have just read, I would like to read one or two extracts from a report given by a gentleman whose business it is to travel in America to sell machinery amongst ginners, and this is first hand. He is a gentleman who has nothing to do with spinning or buying or selling cotton, so that his report is practically unbiassed in every respect.

“ Farmers’ carts are built to contain as nearly as may be sufficient seed cotton to make a bale of 500 lbs. of lint. . . . The farmer sees his seed cotton ginned, and the bale pressed and weighed, and after paying for the ginning, etc., takes his bale of cotton and his seed away with him. . . . Whatever weight the cart contains goes into one bale, consequently the bales of lint vary from 440 to 550 lbs., or thereabouts.”

I should here explain that the bales as made at the country ginneries are very lightly pressed.

“ The rule in the States is to press the bale at the gin house and bind it with cloth and hoops. The farmer takes the bale away in this half-pressed form, and when it suits him to dispose of the cotton he sells it to the dealer in town. . . . The dealer takes the half-pressed bale to the compress house, where it is *compressed and stored until it is shipped to a port*. These compresses are very powerful and turn out two bales a minute.”

Describing the usual method of packing cotton in the gin house he says:—

“ The cotton as it leaves the condenser is usually put into a box and rammed by the steam packer, a kind of steam hammer or ram, which squeezes the cotton from time to time, as it is dropped in from the condenser. (This steam packer, by the way, usually leaks at the stuffing box, and is a frequent *cause of the complaints of wet cotton*.) When the load of cotton which forms the bale is ginned and has come through the condenser into the packing box, the box with its load of cotton is turned round on the table (see diagram of packing press, p. 48), and comes under the steam or other press; but, as stated above, these bales are only half pressed. . . . On seeing this steam packer I could understand

the complaints *re damp packing*, as the board below the ram was packed with wet matted cotton saturated with water (condensed steam) which had dropped from the steam packer above. . . . I drew their attention to this leakage, and they said it was very liable in all steam packers."

Speaking of saw gins, he writes:—

"If cotton (in the seed) is damp or wet, the production is unreliable, as the cotton, sticking between the saws and the ribs, heats and fires if not cleared every few minutes. When cotton (in the seed) is very damp, the saws are lubricated with petroleum to help to clear the brushes."

I don't think you can have anything clearer than that to show how damp gets into cotton either intentionally or unintentionally.

In regard to the question of arbitration, Mr. MACALISTER went on to explain that on the Appeal Committee of the Liverpool Cotton Association the spinner was practically unrepresented, and so from the spinner's point of view they felt that they were not fairly represented in Liverpool. Although a spinner was entitled to become a member of the Liverpool Cotton Exchange, he was only entitled on condition that he was not blackballed, and, unfortunately, he was often blackballed. Spinners knew from their own experience at the mills, where they had seen many thousands of bales opened, that there was added water in every bale.

The CHAIRMAN said they were greatly indebted to Mr. Macalister for the information he had given them. The subject was one of the greatest importance to spinners, and formed one of the many grievances with which they had to contend in providing their mills with cotton. It was worthy of much consideration, and gentlemen present ought to express their views upon it, and see what could be done to remedy the present state of things. He proceeded to give instances of the trouble experienced by spinners in Italy from this cause, and of the unsatisfactory results which followed from having to send samples of damp cotton to Liverpool for arbitration. He suggested that the question was one which ought to be dealt with by the International Committee, and asked for expressions of opinion from other continental members.

Herr FERD. GROSS: As long as we are contented with the argument that no human endeavour can control the damp in cotton we cannot make any progress whatever. We are very much indebted for the valuable material which Mr. Macalister has collected. Is it not possible to have the other matter which Mr. Macalister has got together,

and which is not included in his paper as we have it, also published? We ought to get as much evidence together as possible to solve this question, and to request the Cotton Exchanges to abolish this absolutely justifiable grievance. We always get the answer from the Committees of the Cotton Exchanges that it is not possible to reduce this damp in cotton. If we have at our disposal the material and the arguments which Mr. Macalister has to-day furnished, I think we shall induce the Cotton Exchanges to rectify this grievance.

Herr KUFFLER (Austria) said they had had difficulties in the matter in his country. He explained the system adopted on the Bremen Cotton Exchange for dealing with the matter. Spinners were represented on that Exchange, and they had gone into the question of humidity in cotton very thoroughly, and had held long discussions upon it with cotton merchants. He pointed out that seven spinners were Directors of the Bremen Cotton Exchange, whereas there were none on the Liverpool Exchange. Often enough, when the spinning members of the Bremen Exchange suggested something for the benefit of spinners, they were met with the objection that it could not be granted as Liverpool would not grant it, and therefore Bremen could not. Liverpool was a handicap to them.

Mr. J. R. BYROM (England) said that the whole question of damp in cotton should be gone into and decided very carefully upon a scientific basis.

M. C. BERGER (France) spoke of the position of affairs in France with regard to the subject at issue.

Mr. J. T. DAWSON (England), as a bleacher and dyer, as well as being engaged in the cotton trade, gave it as his experience which went back forty years, that there was no excessive damp in cotton except where sufficient time between the picking of the cotton and its being ginned and baled had not been allowed to elapse for the natural evaporation in the cotton to have taken place. He had no doubt that many of the complaints of damp this season arose from the fact that a few people were anxious to get the new crop in September. In consequence there had not been time for the natural evaporation of the moisture to take place previous to its being ginned and baled. The fact that there had been few complaints concerning the later deliveries supported his contention. His experience of cotton from different countries was that it varied very materially in the amount of moisture even when the cotton was considered to be in a reasonable condition.

Mr. J. M. THOMAS did not think they would do any good until they

had absolutely independent men to settle disputes, both in Liverpool and on the Continent. There would be no real remedy for excessive moisture, or anything else, as long as the question had ultimately to go back to an interested party to settle disputes.

The CHAIRMAN agreed that so long as one side had it all their own way, they would never have any proper dealing with the matter. He did not think they could press this point too strongly.

Herr FERD. GROSS: I should like to add a few words to what I have already said regarding this position. We have had some very gratifying experiences on the Bremen Cotton Exchange, in consequence of the influence which the spinners have on the Board of that Institution. I have been for many years a member of the Board of the Bremen Cotton Exchange, and I can assure you that, although we spinners are in a minority as regards the number, we are not in a minority as regards the influence we exert. We have always found the people there ready and willing to deal with reasonable grievances. I can only point out that such a state of things is most satisfactory, and in some cases it is of great importance to us, especially in cases of differences regarding contracts. In such cases the settlement is referred to a court of arbitration. After this court of arbitration a court of appeal settles the difference definitely. This court decides how the rules have to be applied. Spinners are always called upon to act as judges in this court in conjunction with dealers, and I may say that, in important cases, the opinion of the spinners has a very great influence in the framing of the judgment. We would like cotton to be dealt with according to the same rules on all the Exchanges. In Bremen the Committee would often introduce an improvement if it were not for Liverpool. I would, therefore, suggest that you can, at least in this one instance, learn something from us. I should think that the English spinners with more than 40 million spindles could exercise a greater influence on the Liverpool Exchange than we with a much smaller number.

Dr. HELLMANN, Mr. A. DEARNALEY, and Mr. DERBYSHIRE continued the discussion, the purport of these remarks being that Cotton Exchanges should be urged to give spinners more favourable conditions for the conduct of arbitration in cases of damp in cotton than those at present existing. The experience of the Continental members in regard to humidity in cotton was similar to that of the English spinners.

After the discussion the matter was left with the International Committee, with a view to the preparation of a resolution to be submitted to a future meeting of the Congress.

Mr. MACARA said he was sure the discussion that morning would be of immense benefit to the trade. His experience had been that if they wished to remove any grievance, the best thing they could do was to expose that grievance. He thought that the work that Mr. Macalister and his committee had done could not be estimated too highly. The paper would certainly be included in the report of the Congress, together with the synopsis of the discussion which had taken place upon it.

The CHAIRMAN said he had not troubled them with an address at the beginning of the meeting, but now that they had come to the end of their discussion he would like to say a few words with regard to a hobby of his. He would like to call the attention of English spinners to the evils which followed upon dealing and meddling with cotton futures. This subject was not down on their programme, but he thought it was well worth their consideration.

The bulk of continental trade was done without touching futures at all, and it would be a great benefit to the whole cotton industry if every nation would conduct its business on similar lines. Last year, at Rome, he tried to impress upon Italian spinners how unfair it was to leave English people alone to fight against high prices in cotton, brought about by the gambling element, and he was sorry he could not persuade them to adopt short time, although in the long run it would have been to their advantage.

He would like to indicate to English spinners that, if continental spinners were to try to obtain the adoption of the principle of short time, they would like in exchange that English spinners should consider very earnestly this question of cotton futures. As a means of suppressing this kind of speculation, he advocated no contracts for a longer period than three months. This might seem strange to English people, who had been in the habit of regulating their trade through the medium of futures for many years past; but the plan he had suggested was one which in his opinion was well deserving their earnest attention.

Herr JOHN SYZ (Switzerland) at this stage introduced the newly-appointed Secretary, Mr. Arno Schmidt. Mr. Schmidt would, he said, soon enter upon the duties of his office, giving to the International Federation all his time and energy.

Mr. SCHMIDT, who was warmly received, thanked the Congress for the confidence bestowed upon him, and said he should do his best to give satisfaction.

The CHAIRMAN: I express the sentiments of the Congress in bidding our new Secretary welcome to our Congress staff.

Mr. J. L. TATTERSALL, referring to the protest uttered by the Chairman in regard to dealing in futures, also urged the delegates to do everything in their power towards its discouragement. If they would only do so, the futures markets would become less and less, and in time would entirely disappear.

Mr. J. DERBYSHIRE expressed himself in full sympathy with the Chairman and Mr. Tattersall in this matter.

Mr. THOMAS pointed out that there was another side to the question. There was the case of manufacturers who had sold their productions a long while ahead, and had to protect themselves.

After some further discussion the Congress adjourned.



FOURTH DAY'S PROCEEDINGS,

THURSDAY, JUNE 8th.

CHAIRMAN: MONSIEUR JEAN DE HEMPTINNE.

The fourth day's sitting was held in the Town Hall, Liverpool.

In welcoming the Congress, the LORD MAYOR OF LIVERPOOL (The Right Honourable John Lea) said: It is well that you should come to Liverpool on the question of cotton, because, I suppose, Liverpool owes its position very largely to cotton, and whilst Lancashire has a large share in the cotton trade of the world, Liverpool is to a very large extent the gateway of the cotton manufacturing districts.

In the name of the municipality, I beg to assure you of a warm welcome to our city, and to this historic Mansion House. I believe there are in this Chamber representatives of ten foreign countries, but whatever the difference of language I am sure we shall all be one at heart. We are brethren in two great causes. The first cause that has brought us here is business, but we have not brought simply business in our hands; we have come with goodwill in our hearts, goodwill and friendship, not only to Liverpool and to those we meet in England, but amongst ourselves; and the world is going to be better and brighter, and the goodwill between nations is going to be increased, by reason of these gatherings.

MR. MACARA: Before we commence the business of the day I must, as the President of the Congress, thank the Lord Mayor of Liverpool for his very hearty welcome this morning. When the Lord Mayor of Liverpool heard of this Congress, he said he was most desirous that the great city of Liverpool should share with Manchester in the honour of receiving so many foreign delegates, and I can assure you that that offer was very cordially accepted. We appreciate to the fullest extent the warmth of the Lord Mayor's welcome, and it will be to everyone of us a pleasing remembrance that we have met in this historic building in connection with the deliberations of the Second International Cotton Congress. I beg to thank you, my Lord Mayor, on behalf of the Congress, for your great courtesy in receiving us to-day.

THE LORD MAYOR, in reply, said: I thank you very much. I assure you of a warm appreciation of your acknowledgment of any

little service I have been able to render, and I also assure you it has been to me a great privilege to be associated with so important a gathering.

M. JEAN DE HEMPTINNE then took the chair. In thanking the Congress for the honour conferred upon him by electing him President of that day's proceedings, he said: I wish to say one word—it is that the Belgian Cotton Association highly appreciates the results of the Zurich Congress, and of the services rendered by the International Committee. The Association will always endeavour to contribute to the success of the International Congress.

THE METRIC SYSTEM OF WEIGHTS AND MEASURES.

Introduction of International Uniform Numbering of Yarns on the Basis of the Decimal Metric System.

The following Paper was read by Herr FERD. GROSS (Germany):—

(A)—*A History of the Endeavours that have been made previously for the purpose of introducing a uniform numbering of yarns.*

The efforts to establish a uniform system of numbering the spinnings of all kinds of vegetable or animal spinning materials have been continuous for a period of more than a quarter of a century. At the instigation of the Netheraustrian Chamber of Commerce and Industry, in Vienna, an International Congress for the numbering of yarns was held during the Universal Exhibition, in Vienna, in the year 1873, at which delegates from Austria, Germany, France, Italy, Switzerland, Belgium, Russia and Sweden attended.

The discussions of this Congress lasted from the 7th till the 11th of July, 1873, and led to the following resolutions:—

1. The systems of numbering yarns actually in force hinder business and render it difficult. In consideration of the fact that yarns have now become an article of international trade, and that this trade becomes more perfect with every treaty of commerce, every net of railways, every new line of telegraph and every universal exhibition, it is in a high degree desirable that special efforts should be made to remove the noted obstacle.
2. It appears possible (after a carefully made selection of the units of weights and measures according to the nature of the spinning materials) to number all spinning materials on the basis of one and the same principle.

3. The metric principle appears to be the one best adapted to be taken as a uniform basis.

The number of the yarn will be given by the number of metres contained in one grammme.

4. The length of the Hank will be fixed at 1000 metres for all species of yarns, with subdivisions of ten skeins at 100 metres.

The Congress appointed a Permanent Committee, who had to consider specially which winding-length, and consequently which number of threads per skein, should be adopted for the various species of spinnings. This Committee published an official correspondence paper for the introduction of a uniform numbering of yarns (*Correspondance officielle pour l'introduction du numérotage uniforme du fil*).

The year after the Vienna Congress, a Congress was held at Brussels, from the 21st to the 23rd September, 1874, in which sixty delegates from the principally interested States, as well as from England, took part. This Congress passed the following resolutions:—

1. The International Numbering of yarns shall be based upon the metric system.
2. The grade number of the spinning is determined by the number of metres of the yarn contained in one grammme, with the exception of raw or spun silk.
3. The length of the Hank is fixed at 1000 metres with decimal subdivisions, for all species of spinnings.
4. Any system of winder shall be legal that gives 1000 metres as unit of weight.
5. The numbering of raw and spun silk shall have 1000 metres as fixed unit of length, and the decigramme (100 milligrammes) as unit for the variable weight.
6. In order, however, to take into account the customs of the trade of all countries carrying on silk manufacture, it shall be granted that the number be determined by weighing a length of thread of 500 metres in weight units of 50 milligrammes.

As will be seen, the Brussels Congress, acting in contradiction to the resolution of its predecessor, considered the question also, whether the metric numbering would render necessary an alteration of the existing system of winding. In this respect it was acknowledged that the numbering of yarns should remain independent from the winding system, and that any dimension of the winder should be allowed, provided that such dimension multiplied by the corresponding number of revolutions gave the length of 1000 metres for the hank. The Congress, therefore, did not reject any winder circumference that would be capable of giving the legal length of 1000 metres. This is important, as in the most considerable spinning industry, viz., that of cotton spinning, the usual winder dimension of $1\frac{1}{2}$ yard = 1.37^m —gives for 78 revolutions the exact number of 100 metres within about one per thousand. Owing to this fortunate, although quite accidental circumstance, it is possible to consider the introduction of the metric numbering of yarns as being practicable without any alteration of the winding machine.

It is also of importance that the Brussels Congress should have departed from the principle laid down by the Vienna Congress in regard to the classification of silk yarns, and that that principle was reversed, taking the metre and gramme as the bases, but increasing the number with the thickness of the yarn instead of with the fineness, as is the case with all other textiles.

After the Brussels Congress, followed the Third International Congress for the numbering of yarns, which was held at Turin from the 12th to the 16th October, 1875. This Congress confirmed the work of the Brussels Congress by passing the following resolutions:—

1. The International Numbering of yarns shall be based upon the metric system.
2. The number of any yarn shall be determined by the number of metres of the same contained in one gramme, under reserve of the deviation for raw and spun silk, as set forth in paragraphs 6 and 7.
3. The recognised length of hank for all species of unwound yarns shall be fixed at 1000 metres with decimal subdivisions.
4. Any system of winder shall be allowed that gives 1000 metres of yarn per hank.
5. The number of any yarn, whether twist, dyed or bleached, shall be determined, under reserve of contrary arrangement, by the number of metres contained in one gramme.
6. The number of raw or spun silk shall be expressed by the number of grammes which a thread of a length of 10,000 metres may weigh.
7. Tests shall be made on the basis of a unit of length of 500 metres, and the unit of weight of 50 milligrammes (half-decigram).
8. The legal basis of the numbering of the spinning is the conditioning, which, although facultative, may be required at any time.
9. The conditioning is effected after complete drying of the yarn without altering its nature, and the dry-weight is increased by a certain quantity or proportion.
10. The fixing of the Number is to take place in accordance with an exact method.

The Congress also recommended the adoption of the dimension of the English winder of 1.37^m, this being preferable to the others, and pointed out further a number of winders in use, the dimension of which fitted into the metric system. In conclusion, the Congress proposed certain standards for the conditioning of the various species of yarns, as, for instance, for cotton yarns an addition of 8½% at a temperature of 105° to 110°.

The practical realisation of the decisions arrived at by the three Congresses mentioned above remained unachieved, in spite of the unanimity of the interested parties on the Continent.

This fact caused a Fourth International Congress to be called together in Paris, on the 25th June, 1878. This was attended by upwards of 200 delegates, and at this Congress English delegates

were present. Official delegates had been sent by the Governments of Austria-Hungary, Belgium, Italy, Switzerland and Sweden. The Congress ratified all decisions of the previous three Congresses.

It further considered it a special duty to request the French Government to call together an International Conference. The result was that the French Minister of Commerce promised his co-operation, but this was of no avail owing to the notorious fact that England refused to introduce the metric system. The Paris Congress expressed clearly the conviction that was steadily gaining strength, that success could not be achieved in bringing about the acceptance of the metric-decimal numbering of yarns by mere resolutions of congresses and voluntary agreement of the interested industries.

The cause of this is the opposition of England to the introduction of the metric-decimal system in general, and its application to the spinning industry in particular.

The continental spinners, although quite prepared to apply the gramme metric numbering of yarns, practically for its own sake, are to all intents compelled by the influence of England on the international trade in yarns and by her preponderant contribution to the same, to conform to the English customs regarding winding, packing, numbering and ticketing of yarns. Independent action is made difficult for them, so long as the English spinning industry declines to accept the metric decimal numbering of yarns.

The Paris Congress, therefore, took the view that the question could only be brought to a successful issue by an international agreement of the governments of all the States interested, such an agreement to be followed by corresponding legislation in the single States.

On two points only can the result of the Paris Congress be described as satisfactory :—

France, in her customs tariff and her treaties of commerce, fixed the duties on the various yarns according to the international system of numbering ; further, the spinners of combed yarns on the Continent and especially in Germany, introduced the international numbering of yarns.

Otherwise, this Fourth Congress gave no practical result.

After an interval of 22 years, it was again Paris that, during the Universal Exhibition of 1900, became the theatre of an imposing manifestation in furtherance of the introduction of a uniform numbering of yarns.

The Fourth International Congress held in Paris on September 3rd and 4th, 1900, at which there were official representatives specially appointed by the different governments, passed the following resolutions :—

1. For all textiles, under reserve of the following exceptions regarding raw and opened silk, the number shall be expressed by the number of metres per gramme or kilometres per kilogramme.
2. For all species of wound spinnings the length of a Hank shall be 1000 metres, with decimal subdivision.
3. Any system of winding is allowed, provided it gives 1000 metres to the Hank.

4. The number of all twists shall be determined by the number of metres per gramme, or kilometres per kilogramme, provided there be no contrary arrangement.
5. The standard of raw and open silk shall be determined by the weight in half-decigrammes of a length of 450 metres. The tests shall be made with 20 skeins of 450 metres each, and the single results shall be entered in usual form. Furthermore, the test report or bulletin indicates by the name of "number" the weight of 10,000 metres in grammes.

The test reports shall be drawn up in all countries according to the same sample.

6. The basis of the standard or numbering is the conditioning.
7. The conditioning shall be facultative, but it shall be obligatory if one of the parties demands it. It shall be effected in complete dryness, without altering the composition of the yarn with the addition of the usual proportion (*reprise*) in accordance with the local custom.

At the same time, the Congress expressed the wish that a diplomatic conference might take place, in order to bring about an international agreement on the question of the uniformity of the numbering of yarns.

In a further resolution, the Congress expressed the opinion that, after the publication of the laws and regulations passed by the proposed diplomatic conference, it shall be forbidden to introduce into those countries that have adopted the new system, any yarns which have been wound in a way rendered illegal by the action of the Conference.

In conclusion, the Congress recommended that a respite of two years should be given, counted from the date of the publication of the respective laws, for the enforcing of such new legal measures.

In the course of the discussion the following important points were specially mentioned :—

The General Reporter maintained that the chief obstacle to the uniform numbering of yarns consisted in the refusal of England to adopt the metric-decimal system. Though he mentioned England, it would be more correct to say the English Government, since in business circles in England a growing willingness was evident in favour of adopting this system. On the other hand, Mr. Balfour had declared to a deputation from the United British Chambers of Commerce, that he did not consider the time ripe for the decision of this question, the education of the English people in the metric system of weights and measures not being sufficiently advanced. He added, moreover, that the numbering of the various species of spinnings was quite in order so far as English requirements were concerned.

The official representative of the German Empire stated that in Germany nearly all the parties interested had decided in favour of the international numbering of yarns, and the Legislature was furthering the practical introduction of such numbering. The opinions, however, were very much divided as to the advisability of putting into force the regulation of this question in the continental States, if England did not participate therein.

From this consideration the German Imperial Government had been unable to decide to take up a position in this complicated and important economic question.

As soon as it appeared certain that England would be prepared to join an international agreement in this matter, then would a solution be near at hand for Germany.

A regulation could only be brought about by an international agreement, for the Imperial Government had to take into consideration the interest of those industries which up till now were in the habit of buying English yarns in English numbering.

The President of the Congress, an Austrian manufacturer, Herr Gustav v. Pacher, who occupied the chair at the Congresses in Turin, Brussels and Paris, in 1878, and had been prominently active in furtherance of the uniform numbering of yarns, made an interesting motion.

In view of the fact that the English Government had persisted in its refusal, in spite of the wish of the English Chambers of Commerce repeatedly expressed during the previous ten years, to introduce the metric-decimal system of weights and measures, Herr v. Pacher moved that for the time being no further effort should be made to obtain the participation of England, and that the proposed international conference should be restricted to those States which were in harmony with the programme of the Congress. A proposal should be made to those States to forbid their manufacturers to number and wind their yarns in a different fashion from that prescribed by the resolutions of the Congress, and on the other hand to prohibit the introduction of yarns wound in any different manner. This, of course, did not imply that the introduction of English yarns, as such, should be prohibited, but that the English spinners should be compelled to number and wind those yarns intended for export in accordance with the metric system.

By this means pressure would be brought to bear upon the English spinning industry to urge its Government to introduce the metric system.

This proposal found acceptance in that the Congress expressed a wish for legislation for the prevention of the import of such yarns that did not conform to the decisions of the Congress in regard to numbering.

The explanations given to the Congress by the official representative of England were not such as to create any great hope that the decisions or resolutions of the Congress would soon be realised. He stated that England, with her duodecimal system, consumed by far the greatest part of her yarn production, and that her colonies, as well as North America, were likewise adherents to that system.

Besides, there was the fact that the English system of numbering of yarns prevailed in the whole of the international yarn trade.

Consequently, it was impossible to compel the spinners to use two different systems, since, even in those countries that have adopted the metric system, the spinners refused to accept the proposed alterations.

The difficulties in the way were more considerable than was

supposed. Under the actual circumstances it was impossible to introduce in England the metric numbering of yarns. This was the unanimous opinion of the English spinners. They would prefer to maintain and retain the English system, which was understood in all the yarn markets of the world. He could not believe in the adoption of the proposed system.

The Congress nominated a Permanent Commission, whose mandate has not yet run out. The offices of the Secretary are in Paris, Rue d'Uzès No. 9. Nothing has, however, been made known to the public of the workings of the Commission.

In the foregoing the endeavours to bring about a uniform numbering of yarns have been stated and characterised in so far as they were made by the interested industries, and could claim to be of international importance.

Besides these prominent organisations, similar endeavours were constantly made in smaller circles likewise interested.

The German Congress of Commerce, *i.e.*, the Union of the German Chambers of Commerce, proposed, in 1875, to the Federal Council of the German Empire, that a law should be passed embodying the resolutions of the Brussels Congress. In the same manner, the matter was taken up by the Central Union of German Manufacturers, by the Union of the Textile Manufacturers in Chemnitz, and by a number of German Chambers of Commerce, but without any tangible result.

The furtherance of the movement, at least in Germany, sustained a severe check in that the desires of the spinning industry to base the duties on yarn upon the metric yarn number, or at least to adopt the international number along with the English number, was left out of account altogether in the framing and passing of the new German customs tariff of 1902, which forms the basis of the new German treaties of commerce.

This was brought about by the agitation of the Union of German Yarn Consumers, which claims in the interest of the consumers of yarns, that the unification of the numbering of yarns should not be introduced without the direct participation of England.

(B)—*Advantages of the Reform and Opposition to the same.*

The most important advantage of the metric-decimal numbering of yarns consists in its being in harmony with that system of weights and measures, which, in consequence of its inward, natural—one might even say, organic advantages—has, with few exceptions, conquered the civilised world. Against it, the English systems cannot, in the long run, be upheld, although the well known conservatism of the English people might justify the fear that it will take a long time yet to educate the nation into the acceptance of the new system of measures. It seems, however, unfair to the continental spinners that, just in their branch of business, the only system of metric weights and measures known to everybody on the Continent, as well in business as also in private life, should not be allowed to come into practical use.

The introduction of the metric-decimal system of the numbering of yarns does not result in this ideal advantage alone, but also in quite a number of practical improvements. These comprise all those

simplifications necessarily connected with the use of a system of numeration based upon a logical and organic mode of calculation, and of an order of weights and measures built thereon, which simplifications are, for natural reasons, inherent to the decimal system, but, on the other hand, though likewise for natural reasons, are foreign to the English system. It is impossible to enumerate all these advantages. Nor are they such as could be estimated according to a mere tabulation. Nevertheless, they possess an extraordinary economic value.

It is absurd and unfair that the Continent, which possesses the ideal of a most practical, and in itself most logical system of weights and measures, which system it applied in all spheres of human activity, whilst refusing to learn or know anything about the English pound at $458\frac{1}{2}$ grammes, nor about the English yard at 0.91 metre, nor about any duodecimal division of figures and system of reckoning; it is absurd, we repeat, that the Continent should be compelled to use just in the yarn and twist trade, these old-fashioned systems which it generally cannot even examine.

The consequence of this is that, through reduction of the original number of threads, or through the shortening of the dimension of the winder, falsifications of quantities have crept in, an abuse that would be removed at one fell swoop by the international legal introduction of the metric system.

The further practical advantages mentioned in the international discussions would be, that a high degree of simplification would be obtained in the formulas of calculations required by the increasingly scientific technicalities of the process of yarn production, which simplifications would likewise lighten the task of the master spinner.

The weaver who uses mixed spinnings must likewise know thoroughly all possible numberings of yarns.

In many branches of the yarn trade the result would be greater facilities and economies in handling business.

According to the opinion of the writer, it would be necessary that a reform should be thought out thoroughly and in all details right from the beginning.

The dimension of the winder now generally in use, of 1.5 yards, 1.87 metre, which gives for 73 revolutions 100 metres, should be allowed for a certain period of transition only, and, on the other hand, the general adoption of a winder with a dimension of 1.25 metres, giving an exact yarn length of 100 metres for 80 revolutions, should be advocated on principle.

The equality of the dimension of the winder for all species of yarns is indeed no imperative requirement of the metric numbering of yarns, provided that the product of this dimension multiplied by the number of the revolutions gives the length of 100 metres per skein and therefore 1000 metres per hank, but the equality of the winder would be a great advantage in the practical application of the system, a great simplification and surety in its use.

It is, therefore, desirable to strive in order to attain this equality.

The objections to the introduction of the metric system are chiefly the following:—

The continental, especially the German, yarn consumer, as also

the spinner, to a certain extent, state that the introduction of the metric-decimal numbering of yarns is opposed to their interests, at least so long as England does not adopt this system, or, what would be still better, does not make the metric-decimal measure and weight system generally obligatory. Unless an international agreement be made, binding all nations taking part in foreign trade, and more especially England, to introduce the new system, any movement on the part of a single State therein interested would be impossible.

This standpoint was taken up in Germany especially by a great combination of spinners, the Verband Rheinisch-Westfälischer Baumwollspinner, which partially influenced the position adopted by the German Government, inasmuch as the latter will certainly not proceed in the question of the numbering of yarns without England in the first place.

The following views were put forward above all others by the Association in question :—

Also the circumstance, that in introducing the metrical system the importation of other yarns to Germany than those made up metrically should be forbidden, whilst, however, for purposes of export, the making up of yarns according to other systems should be allowed, cannot warrant any movement without England. The spinner, as a rule, does not himself export; the dealers, dyers, etc., do this, and give orders for whole lots to the spinners and take out of same what they want, whether for home consumption or for export. If England adheres to her system, the German spinner must arrange for delivering yarn in both ways of making-up. Hence arises the necessity of holding stocks and making such arrangements as to machinery, that the latter shall be in a position to provide for the *entire* production, both in English and in metric numbering. The spinners, therefore, would require a complete double arrangement for reeling and bundles, which, in many instances, for reasons connected with space and other matters, is impossible. In the German spinning mills, English machines, moreover, are principally in use, which in all parts are calculated, constructed and made according to the English system. Besides this, the work in German spinning mills is so complicated, that the spinner cannot adopt two systems of making-up and numbering for his yarn, especially as a German spinner does not spin, as in the case with the English spinner, only one, but, in most instances, very many counts. Further, in the metric system far more numbers come under consideration, within the same limits of fineness, than is the case in the English system.

These reasons are certainly not without weight, because they tend to prove that the adoption side by side of two different systems of numbering is impracticable. *The entire reform will, therefore, practically depend upon the fact whether the opposition of England to the introduction of the metric-decimal system of numbering yarns can be overcome.*

Should this not be possible, the combined endeavours of the continental spinners will no doubt be directed first of all, as was already brought forward in the Paris Congress, of 1900, to make the metric yarn system obligatory in their countries, and to forbid by law the sale of yarns made up according to any other numbering. This

would assuredly mean such a serious disturbance to English spinners in their business arrangements, that the demand for the legal introduction of the metrical system in England also would soon become irresistible.

The question will be asked, whether the introduction of the metrical yarn system in England is possible, for which purpose an understanding between the interested parties would, alone, certainly not be sufficient, but rather, to have proper effect, a special Act of Parliament will be necessary, before the greater and more important question is solved in that country, namely, that England shall give up altogether its present out-of-date system of weights and measures, and adopt the metric form of weights and measures. Efforts to this end have now for a long time been made, and above all in industrial and commercial circles. In connection therewith, the Union of Chambers of Commerce of the United Kingdom adopted on the 15th of March, 1899, in London, the following :—

“ In view of the time wasted in teaching a system of weights and measures which, according to the First Lord of the Treasury, is ‘arbitrary, perverse, and utterly irrational,’ and in the opinion of H.M. Consuls is responsible for great injury to British trade, this Association urges Her Majesty’s Government to introduce into, and endeavour to carry through Parliament as speedily as possible, a Bill providing that the use of the metric system of weights and measures shall be compulsory in this country within a period of not more than two years from the passing of the Bill, and suggests that meanwhile the system should be adopted in all specifications for government contracts. That a copy of this resolution be submitted to the President of the Board of Trade, and the First Lord of the Treasury.”

This statement has since that time been repeated every year in a more or less energetic form. For instance, the Fourth Congress of Chambers of Commerce of the British Dominions expressed itself in London, on the 28th June, 1900, on this matter, as follows :—

“ That this Congress is of opinion that the metric system of weights and measures should, as recommended by a Select Committee of Parliament in 1895, be legalised in all parts of the Empire (excepting India) for all purposes, and after a period of two years be everywhere rendered compulsory by Act or Ordinance; and that meanwhile the system should be thoroughly taught in all public elementary schools as a necessary branch of arithmetic, and that copies of this resolution be sent to Her Majesty’s Government, and her representatives in the colonies, with the request that they will give immediate and full effect to the proposals contained therein.”

In the year 1902, the Union of Chambers of Commerce of the United Kingdom expressed itself by 46 against 13 votes to be of the opinion that, considered from the standpoint of the British trade, the obligatory introduction of the metric system of weights and measures has become an *unavoidable necessity*. Again, in 1903 and 1904, the same opinions were expressed and the English Government was urged to *immediately* take steps to get the measure through both Houses of Parliament.

INTERNATIONAL COTTON CONGRESS

The English Government appears, indeed, more and more disposed to abate its previous decided opposition, and in the near future it will be obliged to lend its aid to the obligatory introduction of the metric system of weights and measures into England as well.

(C)—*Bases for the Treatment of the subject by the International Federation of Cotton Spinners and Weavers.*

The work of the International Federation can, according to the points brought forward, only be limited to smoothing the way for the introduction of the international numbering of yarn, *especially in England*. There is all the more opportunity for this because the English spinning industry participates in a prominent manner in the formation and labours of this Federation, and because it, through its English members, stands in an extraordinarily favourable position for promoting and pressing in the strongest and most effective manner the agreement for the new system, and for the introduction of the metric mode of weights and measures in England generally. Before the International Committee engages in any further work, it will be advisable that it shall enquire in the most careful manner possible into the feelings and opinions of the English spinning trade. Should it transpire that the said industry, or, at any rate, an overwhelming majority thereof, is disposed to accept the new system, the way would thus be firmly laid for an international understanding respecting the introduction of the metric numbering of yarns, and the International Federation would have achieved the fine and great result of having obtained what so many important international organisations had previously striven after in vain.

It might likewise prove to be necessary and advisable, before taking in hand any work whatsoever, to make careful enquiries in official English circles as to the prospects existing at the time for the legal obligatory introduction of metric weights and measures into England.

Should it be found, after the steps proposed have been taken, that in the English spinning trade an inclination exists to introduce the metric system of numbering, or that there are prospects of the legal realisation of the metric system of weights and measures in England, the following important consideration will have to be taken into account respecting the different labours to be then undertaken by the International Federation.

Up to the present time the endeavour to base the numbering of yarns on one uniform system has not been limited to the cotton industry alone, but has been extended generally to all branches of the spinning industry.

It will be questioned whether the International Federation, which really only represents the interests of *cotton industry*, shall and will be allowed to break the continuity and consequent progress of international efforts towards the uniform system of numbering, by occupying itself with one single section of the labours of previous Congresses, that of the cotton industry, and limiting itself exclusively to the furthering of our object for this special, although most important branch of textile industry. It will become a matter for further consideration, whether the International Federation should not take up the question of the numbering of yarns on the basis of the very

valuable results attained by the previous Congresses for *all* branches of textile industry, and include amongst those of its members to which it shall assign the treatment of the question of the numbering of yarn, members of other branches of textile industry, in order to continue in this way, to a certain extent, as a legal successor of the previous international congresses, the *whole* of the labours of the latter, and allow *all* branches of textile industry to participate in the advantages of a uniform system of numbering.

The International Committee can only be recommended to take up a definite position in the question of the uniform numbering of yarn in the appointment of a special commission for the advancement of this question, when the aforementioned important preliminary questions have been solved.

*The Metric System: Would its universal adoption be
advantageous to the Cotton Trade or otherwise?*

The following Paper was read by Mr. JOHN R. BYROM (England):—

Permit me at the outset to thank Herr Gross for the admirable *résumé* he has given to the Congress of the history of the efforts which have so far been made to bring about a universal system of numbering yarns; and if I cannot agree with all his conclusions, I trust my remarks will not be translated in any spirit of antagonism, as it would be quite subversive of the aims and intentions of this Congress if either this or any other subject should be approached in, or give rise to, any feeling of national jealousy. On the other hand, I sincerely hope that our successive meetings may be the means of bringing us nearer to each other, and of demonstrating that we have so many interests in common, that it would be the extreme of folly to disagree. Further, let me say once for all, that I do not wish to quarrel with the metric system, much less with a decimal system; each has its own peculiar uses and advantages, but what this Congress desires to arrive at is the best and simplest system for the necessities of our trade.

I take it we all agree that a uniform system of numbering yarns is desirable from an international standpoint, and this desire will become stronger as the nations get closer together.

But the question is: Which system? I reply by asking: Which system now holds the field? There can only be one answer: It is the English yard and pound, and the hank of 840 yards, which is known and recognised throughout the world, and which, notwithstanding legal enactments and conventions, still reigns supreme.

It is over a century since the metric system was first made compulsory by law in France, and yet quite recently a French manufacturer had to submit to a considerable claim for cloth exported to a French

colony, because it was folded in metres and not in English yards. The metre was there, but the yard was there before it.

I need not, however, go beyond the paper we have just heard read for proof of my position. Witness the stand taken by the "great combination of spinners, the Verband Rheinisch-Westfälischer Baumwollspinner," as quoted by my friend, and also the action of the German Government in still insisting upon the retention of the English counts of yarn for their revised tariff. We do not claim perfection for the English system, but the merits of the yard and the pound are such as to command the assent and use of them by a far greater number of people than are using the metre and the gramme.

I must, therefore, most respectfully beg to differ from the position taken up in the first paragraph of Section B.

The metric system may, and does, afford facilities for many purposes, but *for our trade* there are no "inward, natural, or organic advantages" to be found in the metre or gramme, which are not equally found in the yard and the pound; and as to the metric system having conquered the civilised world, it does not appear from the paper now under discussion, to have been finally victorious in any part of it. I grant that many governments have made it legal, our own amongst them, but in how many of these countries does its influence or use extend beyond the port of entry? Take Germany as an illustration of a country not yet conquered, and here we must always remember that previous to the federation of the German States, almost every large town had its own system, and any *one* system was better for a United Empire than a multiplicity of systems. The success of the kilogramme especially was greatly facilitated by the fact that the Zollverein pound coincided exactly with the half-kilo, so that it became a change of name only; and yet when we turn to the standards of measure, we find that there are still in use, in various parts of the country, nine different "ells" in addition to the English yard and the metre. These ells are divided into inches, an inch varying from $\frac{1}{20}$ to $\frac{1}{36}$ of an ell. Such extraordinary ratios as the following are still in use:—The Prussian ell, $25\frac{1}{2}$ inches; the Würtemberg ell, $34\frac{1}{2}$ inches; the Vienna ell, $29\frac{1}{2}$ inches. In proof of this I refer you to a book, of which the last, or third edition was published in 1901, by Friedrich Frowein, entitled "Kalkulator für Artikel der Textilbranche." Indeed we have only to consult the various text books of the Continent to find that so far from the introduction of the metre having simplified the various processes of manufacture, it has merely added one more to the babel of standards already in use.

Neither years, nor centuries of years, will be sufficient to reduce the world to a dead level. We do not attempt to measure the ocean in "minims," that standard is left to the apothecary, who does not wish to poison his customers; and whilst the astronomer may be allowed to give us the weight of the sun in kilogrammes, we may safely leave the jeweller to his "carat."

I now come to the hardship complained of by our friend. "It seems unfair to continental spinners," says he, "that just in their branch of business the only system of metric weights and measures known to everybody on the Continent, as well in business as also in private life, should not be allowed to come into practical use." Again, he says, "It is absurd and unfair that the Continent should be com-

peled to use *just in the yarn and twist trade*, these old-fashioned systems which it generally cannot even examine." But in another place he admits that "in German spinning mills, English machines are *principally* in use, which in all their parts are calculated, constructed and made according to the English system," and also it seems these very spinners refuse to adopt a new system alongside the old one, and, I should say, very properly so. Think of it! Not only are these machines in *Germany* "calculated, constructed and made according to the English system," but so are *all* the machines in this country, in the United States, and Canada, and other colonies; all the machines in India, in Japan, in China and Russia; and, we may add, all the machines in most other parts of the Continent itself. Where then comes the hardship? Does it not arise with the advocates of the metric system who ask us to alter all our machinery; to revolutionise all our industries, and to undertake the initiation of all our old customers, in civilised and uncivilised countries, the world over, into a new system of weights and measures?

Then as to the contention that it is *England alone* which stands in the way of this Utopia, and that it is "only just in the Cotton Spinning business where the metric-decimal system cannot be applied;" what about the silk trade whose headquarters are in France, and with respect to which I notice that a different conclusion was arrived at in each of the five conventions. The most recent recommendation for that trade was not metric in the true sense, and none of the recommendations of the five conventions have been brought into practical use. Many other trades might be mentioned, but surely this one is sufficient to shew that it is not "*England alone*," nor "*only just in the cotton spinning trade*," that the difficulty arises.

Then again, England is not so conservative that she cannot adopt a change when any advantage is to be derived by it. For example, take the action of Liverpool, perhaps the most conservative of our cities, in the adoption of decimals for cotton quotations, and also in discarding the use of the 112lb. cwt. in the weighing and invoicing of cotton.

But, when this country is asked to adopt a new system of weights and measures, which adoption would involve all the other English-speaking countries—a system which it has been estimated would cost our engineers alone at least £100,000,000, and which in short would throw all our industries into confusion, surely it is *prudence*, and not mere conservatism which calls for a pause, and asks the question: For what reason make we this change, and what great benefit are we to gain?

This question brings me to notice the inducement promised. That the introduction of the metric-decimal system will result in "quite a number of practical improvements." I am sorry that Herr Gross did not proceed to point out in detail what some of these "practical improvements" consist of. On the other hand, my friend, Mr. Roberts, will shortly shew you that a very great many *practical difficulties* would at once be encountered.

The hank of 840 yards and its relation to the pound, constituting the counts or number, is the basis on which every process throughout the mill is calculated, indeed it regulates every phase of the industry

from the cotton field to the retail counter, it is understood by all our workpeople, and forms the mode in which we think and speak. The denomination of yarn by the counts or numbers has been carried by our commerce into every part of the world, and to alter it would involve a complete revolution, both in our mills and markets, at home and abroad, and we utterly *fail* to see where we should be benefited. Calculations would *not* be simplified, but very much complicated; our markets would not be increased, but more likely greatly restricted; it would take generations to make the new system as familiar as the present, and meanwhile confusion would reign and our trade diminish.

Coming now to section C, we join in the enquiry: How far can this International Federation act in this matter? and I agree with the writer that "before the International Committee takes any further step, it will be advisable that it shall enquire in the most careful manner possible into the feelings and opinions of English spinners and manufacturers." And here let me warn our continental friends not to be led away by the resolutions passed by Chambers of Commerce, nor even by the action of our House of Lords. In the latter case I may mention that the "Select Committee," which sat last year to take evidence on the Bill, did not call a single witness to represent the textile trades and allied industries.

I would, however, ask them to make the most careful enquiries whilst in this country as to the prospects of England adopting the metric system, and I beg to assure them that anything we can do to help them to arrive at a true decision will be readily accorded. As to the feelings of English spinners, they will probably ascertain what these are without going outside this Congress.

I also agree that if a "Universal Hank" is arrived at, it would be necessary to consult the other textile trades before embarking on any scheme.

I am conscious that I have only very inadequately expressed my feelings as to the serious difficulties the proposed change would lead us into. Whatever be the result of the discussion, I sincerely hope that nothing will be done without the gravest and most careful consideration.

We must not act in haste; there will be no leisure to repent. We begin by being unanimous in the belief that a universal system of yarn numbering would be advantageous from an international point of view, and I trust that if not of this Congress, then of some one of its successors, it will be recorded that we have finally solved the difficulty.

A Cotton Cloth Manufacturer's Case against the Metric System.

The following Paper was read by Mr. T. ROBERTS (England):—

I wish it to be thoroughly understood at the opening of my paper that I do not object to the metric system as a system, but in so far as the metre—on which is based the system we are considering—and the derivatives of the metre, are incommensurable with

any of our English measurements, I have strong objections to it, and I will endeavour to point out how its introduction would detrimentally affect the trade or business of a cotton cloth manufacturer and the internal working of the weaving mill.

The equivalents I have adopted in my calculations and comparisons are those decided upon by an International Committee, which fixed the metre (the unit of length) at 39.3707904 inches, and the gramme (the unit of weight) at .00220462 lb. avoirdupois.

The first point to be considered in cloth making is what we term the "counts" of the yarn to be used. Under the metric system the term would be changed to "Metre Numbers," or "Metre Numbering," and these metre numbers are arrived at as follows:—

1000 metres weighing 500 grammes = No. 1 Metre Numbers.
This gives the formula:—

$$\frac{500 \text{ Grammes}}{\text{Weight of 1000 Metres in Grammes}} = \text{Metre Numbers.}$$

Illustration:—If 1000 metres weigh 15.62 grammes, what are the Metre Numbers?

$$\begin{array}{r} 15.62)500.00(32 \\ \underline{468.6} \\ \underline{\underline{31.40}} \\ 31.24 \end{array}$$

Answer, 32's.

I now draw your attention to a comparison of our English Counts with Metre Numbers. The change from one to the other is made by multiplying by a constant obtained as follows:—

METRIC SYSTEM.

1000 Metres per 500 Grammes = Metre Number.
or 1094 Yards „ 7716 Grains* = Metre Number.

*1 Gramme = 15.432 Grains.

ENGLISH SYSTEM.

840 Yards per 7000 Grains = Counts.
or 1094 Yards „ 9117 Grains = Counts.

Producing

$$\left. \begin{array}{l} \text{Weight of 1094 Yards} \\ \text{No. 1s Counts} \dots \end{array} \right\} = 9117 \quad \left. \begin{array}{l} \text{Weight of 1094 Yards} \\ \text{No. 1s Metre Nos.} \end{array} \right\} = 7716 \quad \begin{array}{l} \text{---} = 1.1815 \\ \text{---} \end{array} \left. \begin{array}{l} \text{Multiplier for converting} \\ \text{Metre Numbers to} \\ \text{Counts.} \end{array} \right.$$

$$\left. \begin{array}{l} \text{Weight of 1094 Yards} \\ \text{No. 1s Metre Nos.} \end{array} \right\} = 7716 \quad \left. \begin{array}{l} \text{Weight of 1094 Yards} \\ \text{No. 1s Counts} \dots \end{array} \right\} = 9117 \quad \begin{array}{l} \text{---} = .84633 \\ \text{---} \end{array} \left. \begin{array}{l} \text{Multiplier for converting} \\ \text{Counts to Metre} \\ \text{Numbers.} \end{array} \right.$$

COUNTS AND THEIR EQUIVALENTS IN METRE NUMBERS.

Counts		Metre Numbers
24s	become	20.312
25s	"	21.158
26s	"	22.005
27s	"	22.851
28s	"	23.697
29s	"	24.544
30s	"	25.390
31s	"	26.236
32s	"	27.083
33s	"	27.929
34s	"	28.776
35s	"	29.622
36s	"	30.468
37s	"	31.314
38s	"	32.161
39s	"	33.007
40s	"	33.853

Having decided upon the yarns from which it is intended to make a cloth, the next points to be considered are the width and length of the cloth, and in order to make clear my subsequent references to these measurements I give here tables of comparison between our English inch and yard, and the metric equivalents of centimetre and metre.

English Inches	Centimetres	English Yards	Metres
30	76.2	30	27.48
31	78.74	31	28.345
32	81.28	32	29.26
33	83.82	33	30.174
34	86.36	34	31.088
35	88.9	35	32.0
36	91.44	36	32.916
37	93.98	37	33.831
38	96.52	38	34.746
39	99.06	39	35.66
40	101.6	40	36.574
46	116.84	50	45.716
48	121.92	60	54.86
50	127.0	75	68.577
52	132.08	80	73.148
56	142.24	100	91.451
60	152.4	120	109.72

I would draw your particular attention to the increase in the number of figures required to express width and length in metric terms. Take as an example, 120 yards 32-inch cloth (of which very many thousand pieces are made each week), converted into metric terms it becomes 109.72 metres, 81.28 centimetres. Again, 88 yards 38-inch cloth will read 34.746 metres, 96.52 centimetres.

In each of these illustrations the English terms are expressed by 5 and 4 figures respectively, whilst each of the metric terms requires 9 figures and the decimal points twice used to approximately express the same meaning.

DHOOTIES.

In this country we have a very large and important trade which is called the "Dhootie," or Scarf Trade, and I would draw special attention to the most serious difficulties that the change would create in the manipulation of this style of goods. These goods are made in any lengths, and I give here a table of comparison of a few of them.

English Yards	Metres
2·5	2·285
3	2·743
3·5	3·2
4	3·657
5	4·572
6	5·486
7	6·4
8	7·315
9	8·229
10	9·144
11	10·058
12	10·972

Take one simple illustration—here I dare not attempt a comparison of reeds and picks—10 yards 40-inch cloth becomes 9·144 metres, 101·6 centimetres.

Any Dhootie manufacturer will agree with me that the particulars of this class of cloth are complicated enough without the change.

Another illustration of the great difficulties to be faced by us in the event of a change to the metric system is shewn in the following table, which compares the number of threads per quarter inch, and the number of threads per centimetre:—

Threads per $\frac{1}{4}$ -inch	Threads per centimetre
15	23·69
16	25·18
17	26·76
18	28·34
19	29·92
20	31·49
21	33·06
22	34·64
23	36·21
24	37·78
25	39·35
26	40·92
27	42·51
28	44·08
29	45·65
30	47·24

It will be seen from the above that our old $\frac{1}{4}$ -inch counting will have to give way to something different, either to a certain number of millimetres or to the centimetre counting. But this is not by any means the worst phase of the change, we shall be compelled to do away with our inch counts.

INCH COUNTS.

In this country there is a very large trade done where the particulars are given out by the merchant to the manufacturer in what are termed "inch counts," that is, the cloth must have a stipulated number of threads in the warp and in the weft, per inch.

Unfortunately, we have no exact equivalent in the metric system to our inch. The nearest we can get is:—

Millimetres.	English Inches.
25	= 0·98245
26	= 1·02362

If it were decided to use the 25 millimetres in place of the inch, then our standard would be lowered by 2%, or, if the 26 millimetres were used, then our standard would be raised 2%. I beg to submit, that a standard like ours for cloth making, which has been in use since cloth making began, should not lightly be altered. This question is a serious one, and requires the most careful thought and consideration of every merchant and manufacturer in the trade, before allowing any alteration to be made.

Using the tables as given, it will be interesting to take one or two illustrations as to their application by the Cotton Cloth Manufacturer attending Manchester Exchange.

Under the present system of English terms, the manufacturer would get, say, the following enquiry:—

Inches	Yards	½-inch Counts	Yarns
38	38	16 x 16	34/38

Convert this enquiry to metric terms and we get the following:—

Centimetres	Metres	Per Centimetre	Metre Numbers
96·52	34·74	25·18 x 25·18	28·782/32·174

The English terms require 12 figures.

Metric Equivalents require 26 figures and 6 decimal points.

I cannot give an illustration of the comparison of "Inch Counts" reed and pick, because, as I stated earlier in my paper, there is no exact metric equivalent for our English inch.

I now give an illustration of a Dhootie cloth.

ENGLISH TERMS:—

Inches	Yards	½-inch Counts	Yarns
40	2/5	18 x 20	34/40
			½-inch coloured border.

METRIC TERMS:—

Centimetres	Metres	Per Centimetre	Metre Numbers
101·6	2/4·572	28·34 x 31·49	28·775/33·853
			6·3499 ^{mm} coloured border.

The English terms require 14 figures.

Metric equivalents require 32 figures and 7 decimal points.

CONTINENTAL RECKONING.

Last year when I had the honour of attending the First International Congress held at Zurich, a Swiss gentleman (a cotton manufacturer) gave me his method of calculating the weight of yarn required to make a piece of cloth. I sincerely hope that gentleman will forgive me making use of his figures as an illustration against the introduction of the metric system to the cotton trade of this country.

You will notice that the particulars are not by any means in metric terms, but the resulting weight is got out in kilograms.

To understand the problem thoroughly, I must give another comparative table which brings in a term used in France, namely, the Paris inch. The equivalents are:—

Centimetres	Paris Inches	English Inches
90	= 33.246	= 35.433

Particulars of cloth calculated:—

Centimetres	Metres	Threads	English Yarn Counts
90	96	19 x 21	38/44

I must explain here that the threads are 19×21 per $\frac{1}{4}$ Paris inch, and must be multiplied by 4 to bring them to the Paris inch, when we have the problem stated as under to get the weight of warp:—

Width in French Inches	Taped Length Eng. Yards	Ends per F'nch In.	Metres	Constant to convert to Kilos
$33\frac{1}{4}$	$\times 105$	$\times 76$	$\times 100$	$\times .46$
840	$\times 38$	$\times 96$		
English Hanks	Counts	Metres		

This equals 3.98 kilos, and requires 178 figures to get at the result.

To get the weight of weft we take the following figures:—

Width in French Inches	Taped Length Eng. Yards	Ends per F'nch In.	Metres	Constant to convert to Kilos
$33\frac{1}{4}$	$\times 105$	$\times 84$	$\times 100$	$\times .46$
840	$\times 44$	$\times 96$		
English Hanks	Counts	Metres		

This equals 3.8 kilos, and requires 156 figures to get at the result.

Compare this method of calculation with ours:—

For weight of warp:—

English Inches	Yards	Per $\frac{1}{4}$ -inch	English Counts
35.5	105	19×21	38/44
$35.5 \times 105 \times 76$	$= 8.87$	lbs.*	= 4 kilos.
840×38			* 2.2046 lbs. = 1 kilogramme.

This requires 96 figures to get at the result.

For weight of weft:—

$35.5 \times 105 \times 84$	$= 8.47$	lbs. = 3.84 kilos.
840×44		

This requires 85 figures to get at the result.

The method adopted by me for calculating on the English system may possibly meet with some criticism from some English manufacturers, but I could not make a true comparison of the number of figures required in any other way.

You will notice that the method of calculation used by my Swiss friend required 329 figures, whilst on the English terms and method 181 figures only are required, the result being the same for all practical purposes.

There must of necessity be far greater danger of error in such a complicated system of calculation, requiring so many figures more than our own system.

If the metric system became compulsory in this country, we English manufacturers would have to face many difficulties and great expense in the internal arrangements of our mills and of our machinery.

We have in our beaming frames, measuring rollers which are generally 18 inches in circumference. This must be called 45.72 centimetres.

Our measuring roller in the tape frame which is 14.4 inches in circumference would become 36.55 centimetres.

The taking-up roller in the loom instead of being, say, 15 inches circumference, would become 33.1 centimetres, and the wheel required to give the pick must not be per quarter inch, but per centimetre.

All the loom widths would have to be altered from inches to centimetres.

All the reeds in use will be wrongly marked, as they are marked at present by the number of dents per inch.

The Uniform List of Prices for Weaving, which has cost so much time and labour to bring to its present more or less satisfactory position, would have to be altered. The list is based on reed space in inches, picks per quarter inch, lengths in yards of 36 inches, and counts of twist and weft as at present understood. This must all give way to centimetres, metres, and metre numberings, necessitating the revision and re-arrangements of the whole list, resulting in the direst confusion and leading to the gravest consequences owing to the confidence it would lose and the suspicion it would create in the minds of employers and employed.

If we adopt the metric system, the whole of our records shewing how we have made our cloth in the past will be of no use for easy reference, as these records would all have to be converted to metric terms before we should be able to compare anything we might wish to make at the present time.

Again, all our literature, text-books, etc., on cotton weaving, would become obsolete, and therefore useless.

AND WHY SHOULD WE CHANGE ?

Why should we give up a system which has been in use in this country from time immemorial, and upon which we have built up a trade which I venture to assert is second to none? A system in which we have educated our customers in India, China, Japan, and the rest of

the world wherever customers are to be found. If we were to change our system to-day, and at the same time found it impossible to persuade China, Japan and other large customers to change with us, what would be the resulting effect upon us? We should be compelled to either discard the metric system, or allow our trade to be taken from us by our friends in the United States of America, who are opposed to any change which will cause them to give up the English inch, yard or pound.

In conclusion, I have the authority of Mr. Henry Higson, the President of the North and North-East Lancashire Cotton Spinners' and Manufacturers' Associations, representing over 300,000 looms, for stating that the consensus of opinion of that Association is against the metric system being introduced into the cotton weaving trade.

Metric System of Weights and Measures.

The following Paper was read by Monsieur F. Roy (France):—

The Directors of the Permanent International Committee for a Uniform System of Numbering Yarns have noted with interest the report which Herr Ferd. Gross presented to the International Committee of the Master Cotton Spinners' and Manufacturers' Associations, assembled at Brussels on the 10th April, 1905, which report is to be discussed at the Manchester Congress.

The Committee fully appreciate the support lent by Herr Ferd. Gross to the ideas which it is their aim to propagate. They also congratulate themselves on the facilities given them for bringing the matter to the notice of the International Federation, and for the opportunity of reviewing the efforts they have made since they began their work in 1900. We notice that Herr Gross reproaches the Committee with not having published anything since that time.

In the first place we give below the resolutions and suggestions which the Committee aim at carrying out:—

Resolutions and Suggestions adopted by the International Congress for a Uniform System of Numbering Yarns, held at Paris in 1900.

First Resolution: For all textile materials, with the reserve hereafter stated concerning raw and spun silks, the counts are expressed by the number of metres to the gramme or of kilometres to the kilogramme.

Second Resolution: The length of the hank, admitted for all kinds of wound yarn, is fixed at 1,000 metres with decimal subdivisions.

Third Resolution: Every system of winding is allowed, provided it gives 1,000 metres to the hank.

Fourth Resolution: The count of all twisted thread is determined, if nothing be stipulated to the contrary, by the number of metres per gramme or kilometres per kilogramme.

Fifth Resolution: The classification of raw and spun silk is determined by the weight in half-decigrammes of a length of 450 metres.

The tests will be made on 20 skeins of 450 metres, and the partial results will be entered in the usual way.

Further, the report will indicate, under the denomination of "number," the weight in grammes of 10,000 metres.

In all countries the report showing the numbering will be drawn up on the said model.

Sixth Resolution: The basis of the classification and count is the conditioning.

Seventh Resolution: The conditioning will be optional, but it will become obligatory at the request of one of the parties. Absolute dryness must be observed in the conditioning, without taking the nature out of the yarn, and adding to the weight the percentage of regain fixed by local usage.

First Suggestion: The Congress is of opinion that, for France, in accordance with the proposal of the Committee of organisation of the Congress of 1900 :

1. The royal ordinance of 26th May, 1819, should be revoked, and replaced by an order requiring, for cotton, woollen, and waste silk (schappe), that the count should be based on the number of kilometres contained in a kilogramme.
2. The law of 18th June, 1866, concerning raw and spun silk, should be modified, and the classification admitted by the Congress, and based on the weight in half-decigrammes of the skein of 450 metres, should be adopted as a legal numbering.

Second Suggestion: The Congress is of opinion that a diplomatic Conference should take place in order to arrive at an international understanding.

Third Suggestion: The Congress is of opinion that after the promulgation of the laws and decrees enacted in consequence of the international diplomatic Conference, the importation of foreign yarns wound in any way which has become illegal should be forbidden in the countries which have adopted the new system.

Fourth Suggestion: The Congress is of opinion that a lapse of two years, from the time of the promulgation of the laws and decrees in the different countries, should be granted for the application of those new legal measures.

By a circular, dated 1st February, 1901, the Directors of the Permanent Committee pointed out to all the foreign members under what conditions the convocation of the diplomatic Conference, mentioned in the suggestions of the Congress, could take place :

"A diplomatic Conference must come to a preliminary understanding, and, in the present case, it is necessary, before this Conference can be summoned, that all the Governments taking part therein, shall in advance agree to introduce, in their respective countries, a uniform system of numbering yarns conjointly with other countries. The members of the Conference will assemble

afterwards only for the purpose of studying how to put the reform into practice and of signing the diplomatic agreement."

In reply to this note, Herr VOGEL (Germany), stated in the first place, that the German Government advocated the metrical system of numbering.

Herr v. PACHER (Austria) announced that the Austrian Government would follow the example of Germany.

The replies from Italy, Spain and Switzerland were favourable.

However, shortly afterwards, we learned that a very strong opposition was about to be made to our plans by the Unions of Manufacturers in Germany, the latter wishing to remain free to introduce yarns numbered, wound and bundled in the English way, and the German Government declared that it would not run counter to this manifestation.

This is a grave obstruction, for the Congress had recognised that it was not admissible for the Government to forbid the national spinners to number and make up their yarns otherwise than according to the metric system, whilst, on the other hand, permitting the introduction of foreign yarns numbered and made up in the English fashion.

All the efforts of the Committee, and particularly those of their German and Austrian members, were concentrated upon trying to persuade these industrial bodies not to maintain their veto.

The Committee were later on able to ascertain that this opposition arose in part from the discussion pending with respect to German customs tariffs. The manufacturers were then carrying on a campaign in order that the English system of counts should be maintained in the classifications of the custom-house tariffs, and this was because they feared that the spinning trade would profit by the transformation of English counts into metric numbering to obtain a modification of the categories to the detriment of manufacturers, *i.e.* of the weaving trade.

Not only were the efforts of the members of the Committee of no avail in inducing the German manufacturers to consent to the forbidding of the introduction of yarns numbered and bundled in any other way than by the metric system, but their efforts were equally vain when they sought to bring it about that the classification of the custom-house Tariff for yarns should be metrical. In order to support the steps taken by Herren Max Frey (Mulhouse), Oscar Haarhaus (Elberfeld), H. Vogel (Chemnitz), in this direction the Directors of the Committee paid a visit in October, 1901, to Mr. Foerster, the Director of the Observatory of Berlin, who was at Paris in order to preside at the International Conference *re* Weights and Measures.* Mr. Foerster seemed very much astonished that any other measure than metric measure could be found in a project of

* The Directors had presented themselves before the members of the Conference, which latter, acting upon a report, had made the following suggestion:—

"That all countries should come to an agreement in order to adopt as a classification of silk and as the legal numbering of other textiles the standard and numbering of the metric system."

Among the members figured:—

Germany, W. Foerster and R. Siegel Austria, Von Lang and W. Marek; Belgium, Rousseau, Italy, Blaserna; Spain, Marquis de Novallas, L. Puigcerver and F. de Parrillaga; Russia, D. Mendeleef and N. Egoroff; Switzerland, R. Gautier and F. Ris; United States, E. W. Morley.

German customs tariffs and he was kind enough to tell us that he would take up this question on his return to Berlin.

Finally, the Manufacturers' Unions did not go back on their decisions; they carried their point with their Government, and the Customs-tariffs were promulgated with the English system of counts.

This double check in Germany impeded the work of the Permanent Committee, for it was impossible to do without Germany and Austria, the latter country having declared that it considered itself obliged to follow in the footsteps of Germany.

Under these conditions, it was no longer possible to hope to reach the end pointed out by the Congress until England and the United States adopted the metric system.

It was only left for us to follow with the greatest interest the propaganda carried on in these two countries with a view to bring about the adoption of the metric system, and we are very hopeful, on seeing what is happening, that the "Decimal Association" will soon gain a victory in England. We shall then be able, with a chance of success, to resume our campaign for a uniform system of numbering yarn.

We may tell you, our English friends, that it was one of yourselves, Mr. Rowlett, a member of the Chamber of Commerce in Leicester, who, at the Paris Congress in 1900, told us, to the applause of all the assembly, that for the previous quarter of a century, he had been striving to introduce the metric system. He showed us the complication and confusion connected with the numerous counts used in England, and concluded with the words: "The metric system must be adopted for counts."

A little time afterwards we were very fortunate in securing the collaboration of the Silk Association for England and Ireland, when we brought forward the question of a uniform system of counts and classifying of silk. We may here mention the valuable help of Mr. Matthew Blair, with whose interesting work in connection with yarn-counts you are probably acquainted.

Being obliged to give up for a time the movement in the direction of one uniform system of counts for cotton, woollen, and linen, the Permanent Committee brought all its energy to bear to secure metric uniformity of classification and counts of silk.

First of all, we had to induce our fellow-countrymen of Lyons to abandon their old classification in *deniers*. On 1st March, 1901, the three great Associations of Lyons decided to adopt the classification of the Congress. Later on, in November, 1901, a Congress of the Directors of Silk Conditioning was held in Zurich, in order to come to an agreement as to the drawing up of the conditioning reports in conformity with the resolutions of the Congress of Paris.

The Permanent Committee received in April, 1902, the favourable reports of the United States, Germany, Austria, Italy, Spain, Switzerland and Belgium. We were then only short of the assent of England, Russia and Japan.

It was in June, 1902, that the Committee received the reply of the Silk Association of England and Ireland. This Association did not accept in full the proposals of the Congress for the classification of

silk. After exchanging a very voluminous correspondence, the English Association put forward the proposal to adopt "the metric classification showing the weights in half-decigrammes of a length of 450 metres, provided that the testing report likewise bears the conversion of this count in a metric number based on the kilogramme." For the uninitiated, we recall the fact that the count is simply intended to fix as regards tests the differences of thickness of the yarn; the *number* gives the length of this yarn.

In consideration of this English proposal, all the members of the Permanent Committee and all the Directors of Silk Conditioning were consulted, and, in November, 1902, we had the general assent of the persons consulted.

The Governments of the United States and of England having declared themselves quite ready to favour the adoption of this measure, but not being able to sign a diplomatic convention so long as the metric system should not have been made legally obligatory, it was decided there should be no diplomatic conference for the international adoption of the classification and numbering of silk.

Following thereupon, the Permanent Committee received, through the Ministry of Foreign Affairs in France, all the official assents; the last one was that of the Japanese Government, which ordered the exclusive use of the metric numbering and classification, beginning with 1st January, 1905.

The Permanent Committee are happy to be able to state that at present there exists in the whole world but one system of denominating and numbering of silk, viz., the metric system.

The Permanent Committee express their wish that the result so happily obtained for silk, with the valuable co-operation of the Silk Association of England and Ireland, and of the Silk Association of America, may also be obtained by the English and American Cotton, Woollen, and Linen Associations, when, at a future period, which we trust may be near at hand, the adoption of the metric system shall be an accomplished fact.

By this summary of the work of the Permanent International Committee for the Uniform System of Numbering Yarn, you will see that they have by no means remained inactive, and you will no doubt agree that there is no need to form a new Committee for the same object. We think that Herr Ferd. Gross, who was not aware of what had been done by the Permanent Committee, will now be of the same opinion.

In his report Herr Gross proposes that uniformity be adopted likewise for the perimeter of hanks. This proposal is very interesting, and may be studied after a consultation of the representatives of the different countries forming the Permanent Committee.

In conclusion, I may say, in the name of the Permanent International Committee, that their President is authorised to propose to keep your Federation regularly informed of their proceedings.

Baron CANTONI: I quite appreciate the feelings that have impressed the two English gentlemen who have reported on the subject, but I must say that in some points they have been misled. I wish to say, as regards Mr. Byrom's report, that in Germany none of

those other measures which he mentioned prevail. Nobody dreams in Germany of talking of ells and so on. These particulars, taken, no doubt, from some book, are simply a sort of historical record. Their use is obsolete. The younger generation does not know of their existence.

Another point mentioned was the necessity of altering machines. We get our machinery from England in English measurements, but we sell our goods in metres. There is no difficulty in calculation whatever. This brings me to Mr. Roberts' report upon numbers. I must say I cannot attach much importance to thirteen numbers, or seventeen numbers, or six; but supposing you have only six numbers to deal with and we had fifteen, we can calculate more quickly on the decimal system than is possible with sixteenths and twenty-fourths. You are beginning to find it much more convenient to count points by the hundredths than by the sixty-fourths, and the price of cotton on the Liverpool market is now reckoned on the decimal system so far as the penny is concerned. Were the system familiar to you, you would not for one moment hesitate to join the Continent on this subject.

All the arguments in opposition to the introduction of the metric system can be fully met. Take an example from the Continent: we import yarn from England on the English system, but we sell our pieces—our woven goods—on the metric system. We find no difficulty in doing so. Of course, our calculations would be made much more rapidly—it would take a quarter of the time to reckon out the goods—if we had not to calculate the hank and bring it to the decimal system or the weighing count. Experience proves that these difficulties are really very slight. The only things which evidently require great consideration on the part of the English people are—first, that of custom and habit among buying nations who are not at such a pitch of education or civilisation as easily to receive a new system of measurement; and then, of perhaps slight differences in the goods—which it would be an advantage to have—when you are altering the system from the English to the decimal system. All scientific men in England recognise the metric decimal system to be a rational system of calculation.

I wanted to point out the fact that there is no difficulty as regards the machinery. In our trade we reckon 40 inches to the metre, and that is quite near enough for any practical consideration. We speak from a lifelong experience. We buy our yarns in the yard, and sell our goods in the metre. We know that we have no difficulty with it, and I don't think English people would. If we were buying our yarns in metres we would have no trouble whatever. Mr. Roberts is not quite

correct in one reference to the metric system. In the metric system 1,000 metres = one kilo., whereas in the French system 500 metres = one kilo.

Herr VOGEL: I support in every respect what Baron Cantoni has explained to you. We were in Germany in exactly the same position as you in England when we adopted the metric system, because we were one of those countries which had so many systems that often it was not possible to remember what systems we had in line, in weight, in measure. We don't believe we are more intelligent than the great English people because we are overcoming all difficulties in a comparatively short time. A great many of our houses and manufactories are much smaller than are found in England, but we nevertheless do trade with a great many parts of the world, and with countries which use other systems. We have always been able to arrange our system according to the wishes of our customers. It has been said that the German Government was opposed to the system, and had not made a law that the metric system should be legal for our yarns. That is to a certain extent a mistake. The German Government is quite ready to introduce the metric system in yarns if the German manufacturers and sellers of yarn would adopt it for all sorts of yarns. We apply it in a great many yarn fabrics, and we use it also in silk. It is difficult for us to have both systems at once. In the German tariff there is not only the metric system, but we have now the English system for yarns. English manufacturers are esteemed the best business men in the world; and I am sure you would find enormous advantages were you to adopt the metric system. I hope you will see your way to grapple with this question; you will find the metric system really the easiest and the best.

Further discussion had to be postponed owing to the length of the sitting, and a paper by Mr. Samuel S. Dale could not be read. It will, however, be found in the Appendix.

Mr. SMETHURST (the Honorary Secretary) announced that the International Committee for the ensuing year had been unanimously re-elected, each of the federated nations having nominated the retiring member. As yet they had had no information from Russia, Mr. Smethurst added, but communications as to their Delegate on the Committee would be opened.

The Congress then adjourned.

FIFTH DAY'S PROCEEDINGS.

FRIDAY, JUNE 9th.

THE PRESIDENT OF THE CONGRESS, MR. C. W. MACARA,
IN THE CHAIR.

This, the concluding day's sitting, was held at the Manchester Town Hall.

The Minutes of the two previous days' sittings having been read and adopted,

The PRESIDENT, before proceeding to the business of the day, expressed his regret that time would not permit of the reading of Mr. Dale's paper on the Metric System, but said the paper would be printed in the Report of the Congress and thus brought to the attention of the cotton users of the world.

COTTON-GROWING.

The PRESIDENT: The business we have to discuss to-day—increasing the supply of the raw material—is a most important one, and our thanks are due to the gentleman who will introduce the subject, and who has taken a leading part in the cotton-growing movement. I regret that, owing to the multifarious duties that have fallen to me in recent years, it has been impossible for me to take that part in the movement I would have liked, but I have done what I could in advocating systematic contributions by the Federation of Master Cotton Spinners' Associations to the funds of the British Cotton-Growing Association. The cotton trade ought to lead, and the other interests should fall into line and do their share. I am perfectly satisfied that if this policy of systematic contributions be adopted we shall not only get the £500,000 wanted, which is a very small amount for a work of such magnitude, but we shall get whatever we require to prosecute this business in the most efficient manner. We hear a good deal about the resources of America, and we are told that they are inexhaustible. Some people, however, say the Americans are nearing the limit of their capacity for producing cotton. I am not prepared to say which opinion is right, but with such evidence before us as to the enormous growth of the cotton industry during the past twenty-five years, and the enormous growth of the population of the United States, it would be most unwise on our part to rely too much

upon America, which will probably give us this season three-quarters or more of our supply. In view of this we ought to develop the growing of cotton in any part of the world where it can be grown. With that broad and comprehensive view of this all-important subject, I welcome the efforts in this direction which are made by any nation. We shall hear to-day what some of the continental nations are doing. I look upon the effort to increase the supply of cotton very much in the same light as the provision of food. The food of the countless millions on the globe is grown wherever it can be grown; and cotton, for the clothing of the vast population of the world, ought to be placed on a similar footing.

THE BRITISH COLONIES.

Mr. J. A. HUTTON, of the British Cotton Growing Association, then read the following paper on "Cotton Growing":—

IN introducing this most important question, it is hardly necessary to do more than allude to the unfortunate circumstances which have led to the establishment in England, France, Germany, and other European countries, of Cotton Growing Associations. The steady increase of demand during recent years, accompanied, as it has been, by no corresponding increase in supply, resulted in a climax in 1904, when many of the cotton mills of the world had to run short time or to stop entirely. The situation has for the moment been relieved by the wonderful crop produced in the United States last season; but we all recognise that should the weather conditions in America be as unfavourable this year as they were in 1903, the crop may be little more than 10,000,000 bales, and we shall again have a recurrence of speculation, with disastrous results for every user of cotton. The large accumulation of capital in the hands of a few individuals gives the speculator an immense power in dealing with the supplies of raw material, and, if the cotton industry of Europe is to maintain its position, it is absolutely essential that new sources of supply should be developed as soon as possible. What America is aiming at to-day is to reduce the production of cotton, so as to keep the price high. What we want are large supplies of cheap cotton.

SUPPLY AND DEMAND.

It is also extremely doubtful whether the United States can produce increasing quantities sufficient to meet the natural increase in the demand for cotton. The population of the world increases annually, and needs at least 400,000 bales more every year to meet its requirements. This means that each year an additional million acres must be placed under cotton, and the question naturally arises: Can these additional acres be found in America, apart altogether from the question as to whether they have a sufficient supply of labour to sufficiently cultivate a largely increased acreage? Putting the present consumption of American cotton at 11,500,000 bales, we find, reckoning the average production at 203 pounds per acre, that it requires at least 28,000,000 acres to produce this cotton. In five

years from now we shall therefore require 33,000,000 acres, and in ten years 38,000,000 acres under cotton to fill the world's requirements. It has been estimated by Mr. Henry G. Kittredge that 35,000,000 acres is the limitation of the amount of land which the Southern States can economically give to this one agricultural product. If this estimate be correct, and assuming America has the necessary labour for its effective cultivation, in seven years from now the maximum production of the United States will have been reached. If, therefore, in the meantime Europe has not provided herself with other sources of supply, we shall then see the cotton trade develop into a struggle for supplies of the raw material, and we shall meet with a period of speculation and gambling which may result in the partial ruin of the cotton industry of Europe. In this matter there can be no question of international jealousy, for our interests are identical, and it is therefore necessary for us to help one another in promoting the object we all have at heart—namely, the establishment of new sources of supply—with the additional advantage of thereby developing many new markets, which would cause largely increased demands for European manufactures.

Apart, too, from other questions, we shall all agree that it is most desirable that our basis of supply should be broadened. We depend to-day for the bulk of our cotton on one country—the United States—and consequently we are dependent on the vagaries of the weather in one particular part of the world. If to-day we could depend on Africa for another million or two million bales of cotton, we should feel less anxious about the reports of the new crop which is now being planted in the United States. If this crop is a partial failure, we shall again have dear cotton, accompanied by the manipulations of speculators, with the consequent dislocation of our industry. On the other hand, if we could depend upon other parts of the world for a large portion of our supply, we could regard with equanimity the vagaries of the weather in the United States. We can all agree on this point: the broader the basis of supply, the steadier will the average production be, and consequently the steadier the price. What we want is plenty of cotton at a fairly steady price, and that price a reasonable one. What the American speculator wants is a small crop, and a violently fluctuating price, which will render it possible for him to manipulate the market to his own advantage. This is what Europe has to defeat.

Before entering upon the work of the British Cotton-Growing Association, I should like to say a few words on the urgency of the question. New sources of supply cannot be developed in two or three years. Mistakes will be made, difficulties will have to be overcome, the right varieties of seed for each district will have to be discovered, also the proper season for planting; natives will have to be educated, and in many instances railways will have to be built, or other means of transport provided, in order to render economical cultivation possible. This must take many years; and in connection with this I must point out that when cotton-growing was commenced in the United States ten years elapsed before the annual crop first reached 100,000 bales, and the first time the American crop reached 1,000,000 bales was 35 years after the industry had commenced. In ten years from to-day, if Mr. Kittredge's estimate is correct, we shall require something like 2,000,000 bales additional supplies from new sources.

It is not too much to say that Europe has not one single moment to lose, for it will take fully ten years to build up a new industry of that size.

THE BRITISH COTTON-GROWING ASSOCIATION.

I now propose to give you a short account of the efforts which England is making to establish new sources of supply in the British Empire. The British Cotton-Growing Association was inaugurated in 1902, and the experimental work was so encouraging that in 1904 it was decided to formally incorporate the Association as a commercial body. In August, 1904, a Royal Charter was granted by His Majesty the King, and the prospectus was issued in November, 1904, with a capital of £500,000. The Association is not committed to any fixed policy. Different colonies will require different methods, and what is suitable for the West Indies may not suit India, nor will the methods which are most adapted for East Africa be the best means of developing West Africa. Further than that, as the industry develops some change of plan may be necessary.

INDIA.

India has naturally occupied a good deal of the attention of the Association, and there is probably little doubt that as far as quantity is concerned, quicker and larger results may be obtained here than in any other part of the British Empire. There is an enormous population, most of which is devoted to agriculture, and in all probability, if the price of cotton remains high, the quantity produced in India will increase year by year. On the other hand, if prices fall to a low level, there may be a decrease in production. The main efforts of the Association have been directed towards an improvement of quality, for it is evident if the native of India is able to produce a better class of cotton that he will obtain a higher price and make a larger profit, with the natural result that if prices fall the industry will still be sufficiently profitable for him to continue planting cotton. In the opinion of the Association the best means of improving the quality are either by the introduction of better varieties of cotton or by improving the indigenous varieties. In any case, it is absolutely essential that the planter should be able to obtain ample supplies of the best selected seed for sowing. Representations were accordingly made to the Indian Government urging the establishment of seed farms in the cotton districts, where experiments could be carried out with different varieties, and where a good strain of seed could be raised for distribution amongst the natives. These farms would also be most valuable for educational work in the best methods of cultivation, and would serve as valuable object-lessons to the natives. I am glad to say that these representations have been most favourably received by the Government; and the Department of Agriculture, under the direction of Mr. Mollison, is now taking active steps towards this object. In addition to the Government work, a company has been formed with a view to establishing cotton-growing in Behar in place of indigo; and the Association has granted £3,000, which sum, with a like contribution from the Indian Government, is being spent by this company in experiments with different varieties of cotton. It is too soon yet to speak definitely of the results, but amongst other varieties large experiments are being made with the perennial "Tree Cotton," which, if successful, may have very im-

tant results. The Government have also been conducting some important experiments with Egyptian cotton in Scinde. The plants have been grown with irrigation, and under similar conditions to those prevalent in Egypt. The cotton produced is of excellent quality, and is worth to-day about 7d. a pound. If further results are equally successful, it is possible that Scinde may some day become a second Egypt. To sum up, one may say that the prospects in India are decidedly encouraging, but progress must be slow, for it is difficult to induce the native cultivator to adopt new and better methods of cultivation.

WEST INDIES.

It is in the West Indies that the efforts of the Association have been most successful, and this is principally due to the fact that the plantations are in the hands of Europeans, and that the Association met with the most hearty co-operation from the Imperial Department of Agriculture, which is under the supervision of a practical agriculturist with a scientific training. Sir Daniel Morris, with his assistant, Mr. Francis Watts, took up the cause of cotton-growing with the greatest zeal, and the efforts of these two gentlemen were largely assisted by the enthusiasm of Sir Gerald Strickland, the administrator of the Leeward Islands. Sir Daniel Morris paid a special visit to the United States to study the conditions of cotton cultivation in Florida, Georgia and South Carolina. This was followed up by the publication of two most useful pamphlets—"Sea Island Cotton in the United States and the West Indies," and "The A B C of Cotton Cultivation." Lectures were given in various islands, with instructions to the planters what to do and when to do it. The Association has sent out a large amount of machinery, which has been loaned to planters or is being run temporarily by the Government. The Council has recently voted £300, which, with a similar contribution from the Agricultural Department, will be devoted towards the cost of two travelling experts, who are visiting the various islands and instructing the planters in the best methods of cultivation.

In no other part of the Empire has the Association's work advanced so rapidly or so nearly approached a commercial basis. Acting on Sir Daniel Morris's advice, the Council decided to send out a representative to complete all the necessary arrangements for buying, financing and ginning. Mr. Lomas Oliver, a member of the Council and an expert spinner of the very finest counts of cotton, very kindly placed his services at the disposal of the Council, and went out to the West Indies last October. One of the principal objects of his visit was to point out to the planters the quality of cotton they should aim at producing, and to draw attention to faults in last year's crop with a view to their elimination in the future. Arrangements have been made for the planters to take over the ginneries which are now being run by the Government, or for agents to work them on behalf of the Association. The whole work has been placed on a business basis; a moderate rate of interest is charged, and a commission to cover brokerage and other charges, leaving a small margin of profit for the Association. By this means the planter and the spinner are brought into the closest possible touch, the planter is able to obtain the best possible price, and the Association has established a sound business, which will in future years be remunerative to itself and of advantage to both producer and consumer.

Fortunately, it has been proved beyond all possible doubt that the West Indian Islands can grow Sea Island cotton of the best quality, and that the planter can make money out of it. If it does come to a question of competition, the conditions are so much more favourable in the West Indies that the planters there can produce Sea Island cotton more economically than can be done in the United States. It is almost impossible to ascertain the exact quantity grown last season, but it is probably not less than 2,000 bales, and the bulk of it has been sold at prices ranging from 12d. to 18d. a pound. This year's crop is, however, estimated at 5,000 bales of 360 lbs., and will be probably worth over £100,000. This is a marvellous result to have been attained in so short a time, and if the Association had attained no other result than this, it would have fully justified its existence. Cotton from the West Indies is arriving now by every steamer, and the bulk of it is selling at 16d. to 18d. a pound, and the quality is very much improved and considerably better than the average quality of American Sea Island cotton.

EAST AFRICA.

In East Africa the enquiries made by the Association have ranged from the Egyptian Soudan, through British East Africa (including Uganda), British Central Africa or Nyassaland, and Rhodesia, down to the Transvaal, Orange River Colony and Natal. It can now be said to be practically proved that cotton can be grown in all these districts, and, what is more important, that in most of them Egyptian cotton will do well. There is an undoubted tendency towards the use of better grades of cotton, such as the best Upland, Egyptian and Sea Island, and it does not seem that we can look for any large increase in our supplies of these qualities from Egypt and the United States. It is therefore all the more necessary that no time should be lost in pushing on these better growths, as well as encouraging the cultivation of medium-stapled cotton, such as is needed in Oldham. It will be gathered from the preceding remarks that we can look to the West Indies for an addition to our supplies of the very best qualities. One may regard it as providential that, although most previous attempts to grow Egyptian cotton in America and elsewhere have not been successful, recent experiments in East Africa have been most encouraging. The cotton retains the brown colour of Egyptian, and, what is more important, it does not lose the silkiness and gloss of the original variety. It is too soon yet to take it for granted that in Nyassaland or elsewhere it will always retain the good qualities of Egyptian, but in a recent shipment from Blantyre it was almost impossible to distinguish two samples, one of which was grown from freshly imported seed and the other from seed of the previous year's cotton. The one misfortune is that, owing to the lack of funds, the Association was compelled to restrict its practical work to one colony, and Nyassaland is the only district which has been "proved," though doubtless results as good may be obtained from the other colonies.

NYASSALAND.

In Nyassaland the Association found its work considerably lightened by the fact that the climate is not unhealthy, and that there was a large number of European planters in the colony, and also

that it was able to obtain the active co-operation of the African Lakes Corporation. The planters have taken up cotton-growing with enthusiasm, and over 6,000 acres were put under cultivation last season. Unfortunately, they had not the advantage possessed by the West Indies of expert agricultural assistance, and they had little knowledge of cotton-growing, and could only find out the best methods of cultivation by experience. The weather last season was exceptionally cold and wet, and nearly all the late-planted cotton has done badly, with the result that the crop, which was expected to be about 4,000 bales, was less than 1,000 bales. On the other hand, the early-planted cotton did very well, and compares most favourably with Egyptian cotton. Some very good results have been obtained with Upland seed, the cotton produced having been sold at a penny a pound over middling American. Very urgent representations were made to the Government, pointing out the necessity of engaging a competent agriculturist, and these representations were most favourably received by the Colonial Office, and an expert with a large Egyptian experience was sent out last March. The Association was, however, not deterred by the partial failure of last year's crop from pushing on the work, and arrangements were made to finance planters to the extent of £10,000. The sum of 8/- an acre is advanced on the planter signing an agreement to clear and plant the land, and to send the cotton to the Association. A further advance of 12/- an acre is made in three instalments of 4/- each. On shipment, the planter can draw for 2d. a pound on the cotton shipped. When the cotton is received it is sold by the Association, and the surplus, after the repayment of the advances, is sent to the cultivator. The Association charges interest on the money out of pocket, and a small commission on the sale of the cotton. It says a great deal for the pluck of the planters that, notwithstanding the partial failure of last year's crop, no fewer than 20,000 acres are under cotton this season. According to recent advices, the cotton planted on the high lands is not growing so well as could be wished, but the last reports of the lower-lying plantations are quite satisfactory. If everything goes on well, we may reasonably hope to receive from British Central Africa this season 10,000 bales of cotton of good staple, which should be worth more than £100,000. Three years ago cotton-growing was unknown in this colony.

There are two great drawbacks to large developments. The population is none too large, as the total number of inhabitants—men, women and children—is only 740,000, in an area of over 40,000 square miles. Another disadvantage is the lack of good transport facilities. The cotton has to be carried to the Shiré river, then transferred to the river steamer, and again transhipped to the ocean steamer at Chindé. Notwithstanding all these difficulties, the planter can lay his cotton down in Liverpool at 4d. to 4½d. a pound. This cotton is to-day selling at 6d. to 7d. per pound. A further disadvantage in connection with the transport difficulty is the fact that thousands of men who might be growing cotton are required for conveying goods to and from the interior. A railway is now being constructed from Chiromo to Blantyre, but, unfortunately, it is not progressing sufficiently rapidly to be of any use this season.

In addition to the efforts which have been made to get the European planters to take up cotton, important inquiries are being carried

on as to the possibility of establishing cotton cultivation as a native industry in Nyassaland. If this is to be made a success, it is essential that the natives should have good supplies of selected seed of the best variety, and it is possible that seed farms will have to be established either by the Government or the Association. Generally speaking, it may be said that cotton is essentially a black man's crop, and it is only when the quality is sufficiently good to command a high price that it will pay the European to cultivate it.

BRITISH EAST AFRICA.

In British East Africa we have an area of 180,000 square miles, and a population of nearly 4,000,000. Unfortunately, owing to the lack of funds, the Association has been unable to undertake any active work in this district. It is not quite certain whether the climate is altogether suitable for cotton-growing. In some districts there is too little rain, in others a full supply, but the dry season does not seem sufficiently well marked for cotton to have ample time to ripen. In the coast districts, where the climate is unfortunately not too good, excellent Egyptian substitutes have been grown, and it is quite possible that with ample funds as large developments may be obtained here as in Nyassaland.

SOUTH AFRICA.

The British South Africa Company is now taking up the question seriously, and the Association has just supplied that Company with forty tons of Egyptian seed, which has been distributed throughout Rhodesia and the whole of the territory under its administration. The area of its possessions is nearly 700,000 square miles; the population is probably close on two millions, so that the possibilities are very large. Some experiments are also being made in the Transvaal and Orange River Colonies, and in Natal.

WEST AFRICA.

Of all the numerous fields in which the Association has been working there are none with larger latent possibilities than our West African possessions. The total area of our West African Colonies is over 500,000 square miles. The population is unknown, but it is probably not less than 20,000,000, or 40 to the square mile. Compare this with East Africa, where the population is not more than ten or twenty to the square mile. The West African is a born trader and agriculturist. It is constantly stated that he will not work; but this is absolutely untrue. The very fact that our West African Colonies export annually over £4,000,000 of produce, every bit of which is the result of native labour, is positive evidence as to what he can do. The soil is suitable; the climate is all that could be desired; the great difficulty is want of transport; and there is a further drawback that the country is decidedly unhealthy. The European cannot as a rule remain on the coast for more than a couple of years without his health suffering, and then he requires a long furlough in which to recruit. Speaking generally, the result of this is that it takes three men to do the work of two, and you never know when an important man may not be invalidated home. There has been a decided improvement in recent years in the health of the European residents in West Africa. But

West Africa has a bad name, and it is exceedingly difficult to get good men to undertake work there except at large salaries. This all seems to point to the fact that West Africa must be developed by the natives, and that the less one has to employ Europeans the better. So far, the general experience of plantations managed by Europeans, whether of coffee, rubber or cocoa, has not been encouraging. The Council therefore decided that for the present the best policy to pursue in West Africa was the establishment of cotton-growing as a native industry.

A good deal of misunderstanding, has, however, arisen as to the Association's recent departure in commencing large cotton plantations in our West African colonies, notwithstanding the fact that the Council is firmly of opinion that the native will work better when farming on his own account than when working as a hireling. These plantations have, however, been undertaken with a view to developing the original policy of the Association and for the following reasons. In the first place, the native requires educating in the best methods of cultivation, and for this purpose nothing could be better than a plantation under white supervision. Every native who works on one of these plantations will become an expert, and when he returns to his home he can tell his fellow-countrymen what to do, and how and when to do it. Moreover, on these plantations extensive experiments can be carried out with different varieties of seed, indigenous and exotic, to discover the variety most suited to the district, the best method of cultivation, and the best time for planting, and whether cotton will do best as a perennial or an annual, and so on. When the best variety has been decided on, then further steps can be taken towards improving it by the selection of the best seed from the strongest plants year after year; and ultimately these plantations should develop into seed farms for the provision of seed to be distributed among the natives. The most the Association hopes for is that these farms should be more or less self-supporting. At the same time, every endeavour is being made to make these plantations a commercial success, and should the efforts be successful there will be a large additional opening for European capital, and more rapid developments may be possible; otherwise it will take a considerable time longer before West Africa is able to produce a million bales annually. In connection with this point, it should be pointed out that the value of a million bales is considerably more than that of the whole of the exports of all the European Colonies situated on the Gulf of Guinea. There is, therefore, all the more reason to push on the work as rapidly as possible.

It is proposed to establish buying centres in various parts of each Colony, which would serve the surrounding district within a radius of 20 to 30 miles. To each of these centres a ginnery would be attached. The work of buying and ginning will, however, only occupy the staff for a period of, say, four to six months, and by attaching a plantation to each buying centre the employés will be fully occupied throughout the year. Each of these centres will act as a nucleus or centre of cultivation; there will be a model farm for educational purposes, which will serve as a seed farm for supplying the native planters with selected seed. The use of selected seed is the most vital factor in successful cotton cultivation, and it would be unwise to leave this important matter, at any rate for the next few years, in the hands of the natives.

It would take too long to describe in detail the work which has been undertaken in each Colony. In Gambia it has been found that cotton does not give as good returns to the native as can be obtained from ground-nuts, and as the area of the Colony is very small it has been decided to give up the work there. On the Gold Coast much of the labour has been diverted to the gold mines, and for the present the work is of a more or less experimental nature, which is being carried on by the Government in co-operation with the Association. The latter contributes one quarter of the expenses of cultivation, and provides the ginning and buying facilities.

In Sierra Leone, Lagos, and Southern Nigeria, as far as can be judged at present, there is a good prospect of cotton cultivation becoming of great importance. The Council has been advised that, in order to encourage the natives to take up what is practically a new industry, it is absolutely essential that the grower should be able to depend on a ready market and a fixed price—certainly for some years, and until the industry is firmly established. An agreement was, therefore, entered into with the Government that in the three above-mentioned Colonies the Association would undertake to purchase all seed cotton offered at 1d. a pound for three years. Should the price of cotton fall, and should the Association thereby incur a loss, this agreement is subject to revision when that loss reaches the sum of £25,000. In addition, the Association has undertaken to establish a model plantation, to provide efficient ginning and buying facilities, to provide experts for the instruction of the natives, and to spend the sum of £10,000 gross in each of the three Colonies annually for the next three years. It is, however, hoped that the returns in the form of cotton will to a great extent balance this expenditure. For these most valuable services rendered by the Association, the Sierra Leone Government will contribute £1,500, Lagos £2,000, and Southern Nigeria £3,000 per annum for three years. The Government of Sierra Leone and Lagos also agree to make no charge on their railways for carrying cotton for three years.

SIERRA LEONE.

The results so far attained have been fairly satisfactory. In Sierra Leone some excellent cotton has been grown, but last season's crop has been a partial failure. The cause of this may be the exceptionally heavy rains which fell last year. The work, however, is not being relaxed in any way, and very careful experiments are now being organised with different varieties of seed, planted at intervals of a fortnight, so that after this season it may be possible to state definitely which variety is likely to be most successful, and which is the best planting time. Prizes are also being offered to the natives for the best cultivated plots. An efficient ginning factory, with three saw gins, driven by an oil engine, was opened a few weeks ago. This factory will be capable of dealing with 5,000 bales per annum. The machinery was all made in England, as the American-made machinery was not found satisfactory. The Macarthy gin has proved useless for ginning West African cotton, and in future only saw gins will be sent out. It should also be mentioned that experts accustomed to cotton-growing in the United States find their experience very little good in West Africa, as the conditions are entirely different; and the Association is now sending out

young English farmers who have had a scientific training, and it is to be hoped that in the next few years the Association will have at their disposal a large staff of competent English experts.

LAGOS.

In Lagos the results have been more than satisfactory. In 1901-2 cotton did not appear as an export, in 1902-3 the total did not reach 250 bales of 500lb., in 1903-4 Lagos exported 2,000 bales, and this season the Association expect from 6,000 to 10,000 bales from this one Colony, which will be worth from £50,000 to £80,000. Those who are acquainted with the usually slow developments one is accustomed to in West Africa will realise with what wonderful rapidity this comparatively large result has been obtained. This is due partly to the fact that the Yorubas are naturally inclined to agricultural work, and partly to the very active co-operation of the Government officials. All this cotton has been grown by the natives, as the Association's plantations have only just been commenced. There are two small ginning factories, at Abeokuta and Ibadan, but a large and up-to-date ginnery is now in course of erection. It will contain five saw gins of 70 saws each, with a large hydraulic press, and will be driven by an oil engine of 100 h.p. The cotton will be carried to the gins by pneumatic pressure and delivered by the same means to the press, so as to avoid all handling. The ginnery will be capable of dealing with 10,000 bales in a season, and will be one of the most perfectly equipped gineries in the world. Several hundred bales of last year's crop have already been received, and the quality, generally speaking, is excellent, and shows a great improvement on that of the previous season. The cotton has sold in Liverpool at prices varying from $\frac{1}{2}$ d. per lb. to $\frac{3}{4}$ d. per lb. over middling American. There is no doubt that we can look to Lagos as an important source of supply in the immediate future, but it is almost certain that the best results can be obtained in those parts of the Colony lying north of the palm-oil belt, and it is therefore most essential that the railway should be extended from Ibadan in a northerly direction. Arrangements have now been completed for extending the railway from Ibadan to Oshogbo, and a road is also being constructed from Ibadan to Oyo, a distance of 25 miles, which will open up a very important cotton district. The great hopes of the Association are, however, centred on that large tract of country lying between Ibadan and the Niger.

SOUTHERN NIGERIA.

In Southern Nigeria some experimental work was commenced at Onitsha, which was fairly satisfactory last year, and has been still more successful this season. Over 100 bales of cotton have been received this year, grown on the Association's plantation, from American seed, and of good useful quality. A large experiment was also made on the Sobo Plains, nearer the sea, but this experiment has been a complete failure. The principal work has now been transferred to the Uromi country, which lies north of the palm-oil belt. Exhaustive experiments are being carried out with different varieties of seed, but so far the American seed has been found the most satisfactory, and it may be stated as practically proved that American seed will do well throughout West Africa.

NORTHERN NIGERIA.

In Northern Nigeria there is an area of 323,000 square miles, and a population of 10,000,000. The Association has undertaken no practical work so far, but important proposals have been made to the Government which are now under consideration. The great difficulty is transport, and before any large developments can take place, railways will have to be constructed. Two experts have visited the Colony, and they are unanimous in reporting that Northern Nigeria contains the best cotton land they have ever seen. Large quantities of cotton are grown by the natives for their own use, and Kano has often been called the Manchester of West Africa. There is practically no doubt that at some future date this country can and will produce millions of bales of cotton.

Some experiments are also being made in Australia, but it is extremely doubtful whether cotton can ever be economically produced by white labour. Enquiries have also been made in Borneo, Cyprus, Fiji, Mauritius, and other Colonies, and there is no doubt that cotton can be grown in all of them. In fact, one can safely state that cotton is a natural product in any tropical country, and that time, capital and experience will alone prove whether it can be produced on the only possible permanent and commercial basis—namely, as a profitable crop for the cultivator.

To sum up the results of the work of the British Cotton-Growing Association in a few words, it is not too much to say that these results have practically proved that *the British Empire is able to produce a vast amount of Cotton and of every quality necessary for the needs of the world.* This is due in the first place to the untiring and unselfish way in which the members of the Council have devoted their valuable time to the work of management; in the second place to the hearty and willing co-operation of the Colonial Office and of the Government officials; and lastly to the generous financial support received, not only from the spinners and manufacturers, but also from the operatives. Lancashire may well feel proud of the public spirit of her working classes, who have subscribed large sums of money in support of this great movement at a time when they were suffering severe losses and actual privations owing to the mills running short time. Probably no movement has ever received such general support from all classes of the community.

I should also like, on behalf of the British Cotton-Growing Association, to express our great satisfaction that several European countries have also recognised the vast importance of this question, and are carrying on work similar to our own. It is also a pleasure to recognise the progress that they have been making, and a still greater pleasure to call public attention to the cordial relations which exist between their Associations and ours. We all now recognise that it is the duty of the manufacturing nations of Europe to heartily co-operate in establishing new cotton fields, so as to ensure the one great essential for the prosperity of their trade—*ample supplies of the raw material at reasonable prices.*

THE COLONIES OF EUROPEAN COUNTRIES.

M. C. BERGER presented the following report on "Cotton-Growing in the Colonies of European Countries":—

The enormous development of the cotton industries which has taken place during the last fifteen years in England and on the whole of the Continent, and which was coincident with the creation of numerous establishments in the United States of America, has certainly been the cause of the incessant and important fluctuations in the raw material which have been observed during these last seasons.

American speculation, powerfully assisted by the capital placed at its disposal, has specially turned its attention in latter years towards raw cotton, bearing well in mind that all the industries on the Continent working with cotton could only subsist by drawing their supplies from America, as India and Egypt only supply very small quantities to European spindles, and the cotton from these sources is not in general use.

Thus, being masters of the situation, whilst considering in no way the prosperity or non-prosperity of the trade in general, speculators have raised or lowered prices at their will, and to-day we are at the mercy of the American jobbers.

The struggle under these circumstances is a most difficult one; we had the proof of it in the season 1903-1904, and we have had still further proof of it in the present season 1904-1905. In 1904 the raw material underwent an enormous rise, such as had previously never been heard of, except during the War of Secession; the crop, which, at its beginning, was estimated as being likely to reach 13,000,000 bales, was exceedingly small, and did not correspond to the needs of the trade. The cotton rates reached the price of frcs. 108 (50 kilos.). They would have gone beyond that price had not the danger which threatened the industry been foreseen, and if we had not had recourse to "short time." This season, the forecasts of the crop describe it as being one of the most important ever known, 18,500,000 bales, perhaps 14,000,000; everything, therefore, would point to an inevitable drop in price.

In spite of this supply, which allows of the feeding of all the spindles in the whole world, the Americans, feeling themselves masters of the article, have been able by their arrangements to keep the cotton back for several months, and have only parted with it in small quantities, keeping rates up at limits which leave them a very considerable profit.

This is a new demonstration of the power of American speculation, and the perfect understanding existing between producers and holders of an article which both know to be indispensable to all cotton industries. This exceptional holding-up of the prices of the American cotton has helped the Indians and Egyptians to maintain, on their side, prices which interfere considerably with the working of the spindles using these two kinds of cotton.

The American spinners are passing through the same crisis as the spinners of the Old World, but they feel to-day that they can look forward to a better future.

Backed up by their Government, American spinners and manufacturers have but one end in view, the development of spindles and looms in order to reach a given moment, still distant, but fatally sure,

when they will be able to export no longer cotton in bales, but in woven goods in all the different ways required by the consumers of the entire world.

Confronted by this very grave situation, England and all the countries of the Continent possessing colonies which offer the conditions needed for the cultivation of cotton, came to the conclusion that it was necessary to take steps which should render them henceforth independent of one single producer of indispensable raw material.

Each set to work, and at the present time we find ourselves face to face with Colonial Cotton Associations, formed in England, Germany, Italy, Belgium, Portugal, Spain and France; interesting trials in the way of cotton-growing are even spoken of as being made in South America, and, above all, in the Argentine Republic.

The various Associations with which my report will, later on, deal separately from the point of view of progress made and results achieved, have almost passed beyond the stage of studies, and are entering into the real period of commercial activity.

It may be said that everywhere rapid strides have been made, and that the results obtained prove the great vitality of these enterprises, when it is borne in mind that it has been necessary to develop this cultivation in the midst of a race generally disinclined to work, to prove to this race what resources they would annually derive from the growth of cotton, to furnish the latter with seed calculated to produce the best quality, to organise little by little centres for purchasing, ginning, pressing, packing, and, above all, to endeavour to secure reasonable rates of transport, which is the most difficult task to perform.

Everything is really going on in the right way, and we may venture to hope that a few years hence the crop of cotton will be sufficiently large to compete with America, and to oblige that country to keep its prices within more reasonable limits.

The natives cultivating cotton at the present time are stimulated by the inducement of gain; they were, in many regions, astonished that anyone should pay them money for a material which for them had no value except for their personal needs.

This question of the cultivation of cotton has become a universal question, in which the public seem to become more and more interested owing to their understanding what an essential thing cotton is for all classes of society, and how many human beings it maintains, and to how many human beings it is indispensable. Cotton is certainly of all textiles the most democratic and the most necessary to all, rich or poor.

In each country the Government should lend its support financially to the Colonial Cotton Association, and, by special measures, favour those persons who are engaged in the cultivation of cotton.

What will take place when each country produces cotton in its colonies to feed a good part of its spindles? When that moment comes we must expect anything and everything from the Americans, and most assuredly the Old World will have to take protective measures against the invasion of the products of the New World. For the moment, do not let us dwell too much on the future, let us occupy ourselves especially with the present, leaving all care of the struggle to our successors in the cotton trade.

Permit me now, after this perhaps somewhat pessimistic digression, to post you up as to the present situation of each of the Colonial Cotton Associations.

RUSSIA.—I have little to say to you about Russia, which first of all thought of developing the cultivation of cotton in the province of Turkestan, and succeeded in causing it to produce, after fourteen years, sufficient for one-third of its consumption.

Russia will continue this work, which has been so well begun, as soon as she has recovered from the terrible trial she is now passing through, and which, to-day, deprives us of the presence of her Delegate to the International Committee.

BELGIUM.—Belgium possesses an immense field in Belgian Congo, representing a tract of land five times larger than France. At this moment she is making trials to some extent everywhere over this vast territory, but we may say even now that the cultivation of cotton will be localised in the country to the south-west, near the sea, and situated to the north of Angola, a Portuguese possession, thus avoiding laborious and costly transport in spite of the facilities offered by navigation on the Congo. A railway will be constructed through the district where the Congo is not navigable.

The trials of cotton-growing on the Congo are being made by Americans who have come from Texas and are well acquainted with cotton. The native, taking little interest in it and disinclined to labour, will only work under the direction of whites; when the whites have gone away, he returns to his primitive lazy habits, and becomes once more a warrior and even a cannibal. American seed appears very likely to thrive and produce a satisfactory quality.

ITALY.—Italy is making trials in cotton-growing in Erythrea only, the soil of which seems favourable to the production of varieties resembling that of Egyptian. The cotton obtained to-day appears of good quality and, as it is still the subject of study, the products gathered are carried to Italy after undergoing the process of ginning in Egypt, that is, half-way between the country of production and the country of consumption. When cotton grown in Erythrea is produced in sufficient quantity, the Italian Colonial Cotton Association will discuss the laying down of special plant for ginning and packing.

SPAIN.—Cotton is cultivated in no Spanish colony. Efforts have been made to grow it in some parts of the south of Spain and in the Balearic Isles, where in former times it gave satisfactory results. It was abandoned because the cultivation of this plant was unremunerative. The quality obtained was at the very least as good as Egyptian. In recent times, on account of the rise in cotton, efforts at cultivation have again been made. The Spanish Government endeavoured to encourage this movement by means of a Bill passed by the Chamber in 1904, by which exemption from taxation is granted for three years on lands intended for growth of cotton, and a distribution of prizes is made in cash to the amount of 60,000 pesetas for the first year, 100,000 pesetas for the second year, and 250,000 pesetas for the third year, to the growers who produce it in the greatest quantity.

These prizes are awarded by a jury composed of the Presidents of the Superior Council of Agriculture, of the Agronomic Consultative

Association, and of the Committee of National Work. Notwithstanding these great inducements, it does not seem that the cultivation of cotton on a great scale is developing, principally because its yield is unremunerative. From the trials recently made in Andalusia it has been found that the net cost is more than 170 pesetas per 100 kilogrammes.

PORtUGAL.—The Portuguese Government appointed in the month of August, 1904, a special Commission for the purpose of studying and proposing means to develop the cultivation of cotton. This commission, presided over by the Governor of the province of Angola, was composed of honorary Ministers of State, the General Director of the Administration of the Colonies, and the representatives of the Home and Colonial Associations of Industry, Commerce, and Agriculture. The work of the Commission was terminated in the month of March, 1905, when it presented to the Minister of the Colonies a report giving a recital of the facts connected with the cultivation of cotton in the Portuguese colonies, and proposing a Bill, which the Minister adopted, with a view to laying the same before Parliament. This Bill proposes:—

1. To quote colonial cotton on the Exchanges of Lisbon and Oporto through the agency of the municipal associations, which would undertake to buy all cotton grown at the price quoted, in accord with the Exchanges of England, Germany and France.
2. Exemption from all land taxes in Africa, and from exportation and entrance duties to the home markets, which represent a profit of ten centimes per kilogramme in relation to the importation of foreign cottons, and exemption of entrance duties for all machines intended for the cultivation of cotton.
3. Selection of seed, and distribution in the cotton stations established in the regions most favourable to the growth of cotton.
4. Reduction of the tariffs of railroads and freights by the boats of the National Company, and an early opening of all the necessary routes of communication.

This Bill will be brought forward for discussion in the present session of Parliament, and every hope is entertained that afterwards a special Association will be organised in order to promote the fullest development needed in the cultivation of cotton, profiting by the concession obtained from the Portuguese Government.

The cultivation of cotton is already beginning to assume some importance, and keen interest is displayed by the Colonial Companies and by the natives.

The importations of cotton from Angola, which were 17,000 kilogrammes in 1903, rose to 107,000 kilogrammes in 1904. In 1905 larger quantities are counted upon, coming from the west coast and also from the east coast, where very considerable plantations have been made by the Company of Mozambique and other colonial societies.

The qualities obtained are fine and certainly superior to the American quality "good middling." In the province of Angola, as in Mozambique, there are territories large enough to produce a quantity of cotton sufficient for the entire consumption of the world, and the conditions of cultivation are of the most favourable kind.

GERMANY.—The German Association, known under the name of "Kolonial-Wirtschaftliches Komitee," has begun with a sum of 937,000 francs. It also receives annually, both from the imperial government and from the government of Togo and West Africa, 75,000 francs, an amount which will certainly be increased this season. The production of cotton is progressing, and the quality appears to give satisfaction to those who have used it. The places where cotton is produced in the German colonies are favourably situated as regards transport to the centres of consumption. I have not the necessary information to give you an idea of the quantities produced up to the present and those expected this year.

ENGLAND.—A gentleman who can speak with more authority than I, my friend, Mr. Hutton, will give you the necessary information about the English colonies. I have merely to tell you of the increase in the cultivation of cotton in the very numerous English colonies.

For the season of 1904, the value of cotton gathered may be estimated at £100,000; for the season now running, if nothing occurs to damage the crops, the value of cotton to be gathered may be estimated at £250,000. It must be granted that this is a magnificent result, when one bears in mind the modest resources which have allowed this result to be reached.

In England the firm opinion is held that the yield of cotton in the various colonies of the Continent will be easily absorbed. This opinion is based on the fact that it is impossible to plant cotton in America over a greater area than 35,000,000 acres, and upon the annual increase of spindles consuming 400,000 bales more each year. If the colonies do not produce a large amount with their new growths, many spindles will be exposed to the danger of lying idle for want of raw material. On the other hand certainly the Cotton-Growing Associations will have accomplished a great work, by assuring to the new cotton-producers undoubted success and satisfactory remuneration for the efforts made.

FRANCE.—In 1903, we occupied ourselves with prospecting; in 1904, we made a selection based on the results obtained and on the fresh information we have been able to gather concerning certain regions respecting which, at the beginning, we felt some hesitation as regards their suitability for cotton growing. Our efforts were more particularly directed to the Soudan, Dahomey, Madagascar, and the region of Oran in Algeria.

SOUUDAN.—In the Soudan, the Association considered that prudence and reason counselled that they should not split up their forces, and decided to concentrate their action in the region of Segou, which was favourable, both on account of the numerous native plantations to be found there, and through its relative proximity (170 kilometres) to Koulikoro, on the Niger, the head of the railway line which ends at Kayes, on the Senegal.

In 1904, the natives were in general quite disposed to continue the efforts made the previous year, for they had recognised the superior quality of cotton produced from the American seeds. Five tons of this seed were sent in May, 1904, and distributed for the greater part in several villages in the districts of Segou.

The natives cultivated carefully, and willingly followed the advice given them, and relying on a return for their work, they showed them-

selves eager to sow the exotic seed. The cotton season of 1904-1905 commenced under fairly good auspices, the raising of seed was carried on regularly, and the growing crops gave excellent promise.

In the month of January last, a letter brought us less good news as regards the plantations; the cotton trees had suffered much from the drought caused by an east wind which damaged a great part of the crops in the Soudanese region. It is to be noticed that the native cotton plants of two years' growth suffered least, because their roots had been able to reach a cool subsoil. In a like manner the cotton trees produced by our American seed sown in June, 1904, that is to say in the same year, were less affected than the native cotton plants of the same age.

I must point out that the drought was almost general in West Africa, and that the news we have received from all sides allows us to state that our Colonial Cotton Association has not been the only one to suffer thereby. This is but a slight consolation, yet this incident leads us to think that it will, perhaps, be necessary, in certain districts, to make use of irrigation in future, in order not to see the crops exposed to almost complete destruction in case of a severe and irregular cold season.

DAHOMEY.—Our action in this colony is of too recent a date to allow us to form any opinion. The Colonial Cotton Association caused exotic seed to be distributed, but in this country also rain did not fall in sufficient abundance, and came too late. The drought, fortunately, does not appear to have done damage to the same extent as in the Soudan.

MADAGASCAR.—The trials undertaken in 1903, with various varieties of seed, have proved that this island could furnish abundantly, principally on the west coast, products remarkable both in respect of length and fineness of their fibre. In November, distribution of seed will be made to the inhabitants of the western districts, and of the province of Betsileo.

ALGERIA.—Two hundred kilogrammes of Egyptian seed have been distributed by the Association to colonists settled on the plains of Sigg. de Pérrégaux and de Relizane. The different cottons obtained are of quite remarkable qualities, and met with great appreciation in the market of Hâvre.

The French Government lends its aid to the development of cotton-growing in its various colonies, carrying out works necessary in the construction of the means of communication, which in two or three years' time will allow of the cotton being brought to the French ports at rates no higher than are paid from New Orleans or Galveston.

The natives of Soudan and Dahomey seem to take very kindly to the new cultivation, which, after much thought, was recommended to them. They are pleased to receive money in exchange for their cotton, and are satisfied with the qualities obtained from American seed; they recognise so well the difference of quality that, at the time of the last crop, they kept for themselves the cotton obtained from American seed, and wanted to deliver to us the cotton gathered from their native cotton-trees.

The qualities obtained in the Soudan, Dahomey, Madagascar, and also in Algeria, are of very good staple and have been very well manipulated, as may be seen from the specimens which we submit for your appreciation.

PORTUGUESE COLONIES.

A report on "Cotton-Growing in the Portuguese Colonies" was submitted by Senhor H. P. TAVEIRA.

On July 15th, 1904, the Portuguese Industrial Association presented to His Excellency the Minister of the Marine and the Colonies (General Gorjão) a statement pointing out the results of the deliberations of the first Congress, held at Zurich, from the 23rd to the 27th of May, 1904, under the auspices of the Federation of Master Cotton Spinners' Associations.

That statement contained the history of the cotton industry in Portugal, signalling the priority of this country in the cultivation and exploitation of the cotton tree in the African colonies, and praying the Government to renew the efforts made some fifty years ago to efficiently protect the development of the cotton industry, which includes many very important interests for the commercial world.

A Commission was charged, on August 8th, 1904, to study the question. This Commission remembered, first of all, the capacities of the Portuguese colonies for the cultivation of the cotton plant, and the duty of interesting Portugal in the international work of the augmentation of the raw material so necessary for a huge European industry.

The Commission was presided over by Councillor Dias Costa, formerly Minister of the Marine and the Colonies, and was composed of the late governors of colonies, MM. Ramada Curto and Ed. Costa, *chefs du bureau du ministère*, MM. Machado and Ribeiro, representing the commercial associations of Lisbon and Oporto,* of the Colonial Bank, of the Portuguese Navigation Company to the African ports, also the colonial agriculturists MM. le Comte de Val-Flôr, Bacelar and Almeida, the professors Pereira and Castro, of the Lisbon Agricultural Institute, and the agriculturists MM. Almeida and Seabra.

The Commission concluded its labours on the 17th March, 1905, and presented to His Excellency M. Moreira, Jun., the Minister of the Marine and the Colonies, a detailed report, the result of a profound study of the question. The report was inspired by patriotic sentiments, and expressed a strong belief in the future of the cultivation of cotton in the colonies of Portugal with the co-operation of the Government. It also pointed out the possibilities for individual and collective initiative, and the aid which could be rendered by the native element.

The report found that the first legislative measures had included all the necessary elements to enable the Government to determine any action for the cultivation of cotton in these over-sea domains; measures which, initially dating from 1852, were renewed several times up to 1865, in the hope that the system might be brought to a pitch of perfection.

One of the best parts of this work is the report of the Colonial

*The Lisbon Commercial Association was represented by the Director A. Coelho; that of Oporto by M. Araujo (president); the Portuguese Industrial Association by the president, H. P. Taveira (International Cotton Federation); and the Industrial Association of Oporto by M. A. F. Nogueira (president).

Council of 1861, which, justifying the royal decree of December 4th of the same year, granted facilities for the obtaining of plots of ground* destined for the cultivation of cotton, and authorised the Government to import a quantity of chosen seed, with the view of distributing it gratuitously to the agriculturist. Further, it demanded the purchase of gins and other necessary machinery, the free import and export of cotton, and, indeed, all material (machines, building materials, agricultural implements, means of transport, and seed) of which need would be found. Three prizes of 50,000 francs (£2,000) to be distributed each year during ten years to growers having the finest cotton plantations were also suggested.

In 1863, a Brazilian planter was engaged to take the direction of the plantations in Angola. In 1858, the exportation of cotton of the first quality already showed 10,000 tons in weight. In 1867, this was raised to 200,000 tons, growing to 800,000 tons in 1877, but to descend to 200,000 tons in 1890. It was practically nothing from 1892 to 1902. The following year the figures again mounted to 17,000 tons, and, thanks to the energetic campaign of the Lisbon colonial press, we find in 1904 an increase up to 107,000 tons.

The plantation of cotton has again been taken in hand in both East and West Africa by the Portuguese Colonial Societies of Cazengo, of Cabinda, of the Portuguese Congo, of Angola, of Mozambique, of Zambesia, of Busi, of Luabo, by various planters in Saint Thomas, and in *prazos* (Zambesia) of the Crown with a striking success.

The samples of the new cotton sent to Europe received the best price in the market, and were judged superior to the corresponding classes of foreign cotton. At the forthcoming exhibition to be held in Manchester, and at that of the Imperial Institute in London, will be seen the samples of Portuguese cotton, which will be sent by the Industrial Association of Portugal and by the Lisbon Geographical Society.

The report of the Portuguese Official Commission pointed out to the Government the measures taken by the Ministers of the Marine and the Colonies (1899 to 1901), MM. Ed. Villaça and Teixeira de Sousa, with the view of the protection of cotton-growing. These ministerial measures assure for a period of fifteen years a differential duty of 50 per cent. in favour of the importation of Portuguese colonial cotton into the kingdom of Portugal, and the exemption from all duties on the exportation of agricultural machines to the Portuguese colonies.

The present minister, M. Moreira, Jun., has given to these measures a liberal interpretation, enlarging by this fact the delicate question of customs.

The report of the Portuguese Official Commission, resuming, as we see, the former national legislation, recalls the work undertaken and followed in foreign countries to solve, as quickly as possible, this very important problem. It mentions the initiative of England, and the courageous efforts employed by the British Cotton Growing Association, with the co-operation of the Master Cotton Spinners' Associations and the Trades Unions. It shows that the French Chamber of Commerce, the manufacturers, colonial societies, and all

*From 1862 to 1865, these concessions amounted to 597,483 hectares in Angola, and 50,000 hectares in Mozambique.

the government officials, try to assure the success of the work undertaken by the French Cotton Association. And we see Germany beginning, by the agency of the Colonial Committee of Agriculture, the cultivation of cotton in Togo, in the Cameroons, the South-West and East German Africa, and in other colonies.

The Commission has had occasion to make a reference to the speech made recently in the Chamber of Deputies, in France, by M. Flayelle, on the cultivation of cotton in the colonies, and the influence it will have on the future of the French industry—a speech in which the orator spoke strongly in favour of the development of the plantation of cotton, which he considered ought to be carried on hand in hand with the construction of railways and roads for communication.

The Commission pointed out that it would be a good move to re-organise the Bureau of Agriculture, so as to ensure an enlightened and effective exploitation of all the possibilities of cotton-growing. In its opinion, the roads of communication ought to be opened out in all directions, especially those which could be aided by the navigation of the African rivers. It returned to and insisted upon the principle of the exemption from all duties on import and export of colonial cotton, machines and instruments necessary to the development of the industry in the Portuguese colonies, and on seed; but with certain restrictions in order to prevent the possible introduction of diseases which attack the cotton plant. It also asked that the importation should not be authorised except when the cotton has been purchased at the producing centres by the national experts or by the foreign associations.

The Commission, approving of the results obtained by the foreign initiative, also found that the capability of the Portuguese colonies to advantageously contribute to the extension of the cotton-growing areas was great. It affirms that the assistance of the Government would be sufficient to assure to the Portuguese industry all the raw material which it would have need of. The Government would serve principally to give value to the products of native labour, as the energy of the native labourer would rest upon the amount of value placed upon his work. By this he would know the quality and prices of the cotton sent by him to the market. It is to be hoped that the assistance of the officials and the missionaries will be given to that essentially patriotic work. It is necessary to inspire confidence in the native. That is the best way to gain their devotion and friendship, and the one mostly advised by colonial writers. Such a way cannot be legislative, as its influence is moral, and depends upon the character of the men and the spirit of the institutions. It is for those who hold the reins of government to inspire by example.

The report of the Portuguese Official Commission gives some very interesting information on the trials of cotton-growing in English Central Africa in 1903-4, and reproduces the account relative to the extension of the plantation, to the proportionate production with regard to the purchasing price, to the cost of transport, to the cost of the installation of machinery, and of the system of machines generally adopted. We also find in the report that M. E. Vilhena, Governor of Portuguese Nyassa (1903-4), speaks in his annual report of the exceptional conditions of the Nyassa region for the cultivation of cotton, according to the regularity of the rainy season which is not so well marked in the south. Finally, the report submits to the consideration of the

Government the following propositions proper, to establish a protective legislation for the cultivation of cotton in the Portuguese colonies:—

- (a) The transactions are to be operated by the agency of the Lisbon and Oporto official Bourse, under the regulations of the commercial code. These Bourses will indicate the origin of the cotton, the quantity existing in the dépôt, or on voyage.
- (b) With the assistance of the Commercial Associations of Lisbon, Oporto and the Colonies, the local committee will be organised to occupy themselves with the purchase of cotton, on behalf of the cotton user, and superintend the actual cotton-growing.
- (c) The quotations of colonial cotton will be regulated according to the nomenclature, and the classification of equivalent products in the foreign markets, in taking into account the kinds which have the preference of the national industry. The prices of cotton will be officially telegraphed to the Portuguese colonies, and will be published regularly in the government bulletin.
- (d) In case of the foundation in Portugal of a Cotton Association, similar to those of Germany, England and France, this would have the powers before-mentioned accorded to it on the same basis as the commercial and industrial associations.
- (e) Facilities will be given for acquiring ground destined for the growing of cotton. In East Africa and the *prazos* the regulations of the Crown lands will remain law.

Now come the conclusions relating to finances:—

- (a) Colonial cotton shall be free from all import duty in the home country for a period of ten years.
- (b) The additional impost of ten réis per kilo shall be remitted.
- (c) Portuguese colonial cotton imported for home consumption shall be exempt from the duty of ten réis per kilo, which was established to create a fund for the construction of the railway at Malange.
- (d) Agricultural and industrial machines and instruments for the Portuguese colonies will continue to benefit from their exemption from all the customs and duty charges.
- (e) The Government shall be authorised, if the individual or collective initiative is sufficient, to establish experimental stations for the cultivation and preparation of cotton, to make the installations necessary for the instruction of the natives and the heads of the plantations, and to multiply the roads of communication; also to arrange for an acceleration of the means of transport by railway and shipping.
- (f) The exportation of choice seed will be free from all duty if these seeds have been bought by the national experts, or furnished by the cotton associations of foreign countries.

It is hoped that the Government will give eventually, and for a reasonable time, the freedom to allow the cotton to remain at the custom houses, in order to avoid the sale of stock at a low price.

Since this report has been presented, M. le Dr. Moreira, Junr. Minister of the Marine and the Colonies, has placed before the Chamber of Deputies a proposition asking for a parliamentary authori-

sation for the construction of a light railway from Mossamedes to Chella. This would be a most important help in the development of the agricultural possibilities of the southern part of Portuguese West Africa, which is the region most favourable to the growth of cotton. The Chamber not being able to discuss the question before August 26th, we understand that, in order that his scheme shall not be delayed, the Minister will submit for the King's signature, under the Act of 1852, the decree relative to the construction of the railway before-mentioned, of which the plans are already complete.

As to the propositions tending towards the development of cotton-growing in Portuguese colonies, these will be placed before the Chamber at the next session, in August. Their acceptance cannot be obtained by the exceptional means which have been used in the case of the railway.

DUTCH COLONIES.

M. R. A. DE MONCHY reported as follows on "Cotton-Growing in the Netherlands":—

In the Dutch West Indies (Surinam and Curaçao) the cultivation of cotton was in former years of great importance, but it gradually fell off, and in recent years it was practically nil. Fortunately, however, a change is taking place, and the cultivation of the plant is again being taken in hand.

The Government of Curaçao is now, under certain conditions, providing seed gratis for anyone who wishes to experiment in this matter, and is also offering prizes for the best result, for the best cultivated cotton-field and for the best description of the planter's experience. Again, the Government will either provide cotton gins, or render assistance in obtaining these machines.

The Government of Surinam is also now providing cotton seed gratis for these experiments.

The cotton which grows wild in the Dutch West Indies is of about the same value as Upland cotton. The cotton grown from Egyptian seed is very fine, white, and of long staple. The cotton grown from Sea Island seed is splendid, very glossy and silky, colour very good, staple of extraordinary length.

In the Dutch East Indies (Islands of Java, Sumatra, Borneo and Celebes) the cultivation of cotton is at present chiefly confined to Java, although the cotton which grows wild in Borneo is of very good quality.

As regards Java, the Government has provided advances of money (without interest) to any who were really in earnest about the cultivation of cotton, and this has caused many to make experiments in cotton-growing; and in the last few years these experiments have been so successful, that the Government has decided to continue the advances this year.

I can also state further that our Cotton-Growing Association will send out some gins and presses to Java.

AN APPEAL TO THE NATIONS OF EUROPE.

Mr. ALFRED EMMOTT, senior Member of Parliament for Oldham, moved the following resolution:—

“That this International Congress of Cotton Spinners and Manufacturers recognises the importance of the establishment of new sources of the supply of cotton, and urges the nations of Europe to do whatever is possible towards promoting the cultivation of cotton in their various dominions.”

The presence of the Delegates, Mr. Emmott said, marked their sense of the importance of the question to themselves and to the great trade in which they were interested. I would venture to utter a word of caution in regard to the prophecies as to what the United States of America can and cannot do. A dozen years ago some of us in this part of the country were very much interested in the question of bimetallism. I think some of us were misled by the fact that men of great authority then prophesied that the utmost output of gold was not likely to exceed twenty-five millions per annum. We have since seen how those prophecies have been entirely falsified by subsequent events. In regard to the possible acreage of cotton in the United States of America, or, rather, in regard to the more important question of the amount of cotton which can be grown in the United States of America, I venture to tender a word of caution. If the acreage is restricted, even if thirty-five millions is the utmost the United States of America can find for cotton, I am not at all sure a very great deal more cotton cannot be grown on that number of acres than has been on the average produced per acre during the last ten, fifteen or twenty years. I am inclined to believe—although I speak entirely as an outsider with no practical knowledge of the question—that more intensified cultivation would probably pay, and that a very great deal more cotton per acre can be produced there than has been produced in the past, without arriving at the time when what is known economically as the law of diminishing returns would apply. That is to say, a great deal more capital and labour might be employed on the land and be made to pay in the cultivation of cotton.

The value of this movement for growing cotton in various parts of the world is two-fold. In the first place, we European nations, who have large colonial possessions, are aiding them and doing ourselves a reciprocal benefit. In addition, if we show to the United States of America, for whom in this country we have the most friendly possible feeling, that we are not prepared to allow them to charge us whatever they like for cotton, that we are ready to take their cotton at a reasonable figure, but are also ready to provide our own if we do not get the

article from them at a reasonable figure, then we are spurring on the United States of America to themselves produce, if necessary and if desirable, larger quantities of cotton than they have done in the past. Don't let us forget that cotton cultivation in new districts must be slow.

Proceeding to speak of the difficulties that inevitably face anybody who endeavours to encourage the growth of cotton in new districts, Mr. Emmott said there were sure to be difficulties as to labour, and there were generally difficulties as to transport. Experiments had to be made in regard to the soil, the climate and the seed, and all these matters required watching with the very greatest care or else no satisfactory result would be arrived at. The greatest difficulty of all was the labour question. Cotton was a hot climate growth, and could not, as a rule, be grown in those parts of the world where white men could work hard in the fields. At the bottom of this question, so far as England was concerned, there lay the problem of how they could best deal with the black or coloured labour, that could alone produce cotton satisfactorily. He did not think a European Congress was more required on any question than that of the proper treatment of the black races, who had become subject to European power. He did not think of this difficult question merely from a humanitarian or sentimental point of view, but there was in connection with it an ethical question, an economic question, and a psychical question, and they ought all to be very carefully considered. He was strongly of opinion that they would never get large quantities of cotton grown by black men unless they grew it as farmers, and not merely as hired labourers, and they must try and find out how the blacks could be trained to produce the best results. He believed that this could be most effectually done under a system of free labour, and under a system by which the blacks retained possession of the soil which had been theirs for long ages past. What we have to find out first of all is how to lead them along the paths of industry and of commerce without taking from them the freedom of which we have no desire to deprive them.

Mr. Emmott continued: I am perfectly certain that in the solution of this problem will be found the best solution of the problem of the increased growth of cotton, particularly in Africa, with which we are dealing to-day. I say it is an ethical problem; we must remember these men have rights, and we must be careful to recognise them. It is an economic problem, because unless we treat these men properly we cannot get the best economic results from their labour. And it is a psychical problem because we must try, as far as possible, to get inside the black's mind, so that we can most readily lead him on the line of

his natural development in order to become a better being than in the past, and a man who freely, willingly and happily undertakes the regular work which is necessary for his moral and material regeneration.

I have made these remarks because I feel so strongly that this cotton-growing movement cannot in the long run be in any sense dependent upon charity. We must get it started on its own lines; let it stand on its own bottom, so that it will go on by itself as it has gone on in the United States, in Egypt, in Brazil and elsewhere. In order that this may be done, I am perfectly certain we must deal with this important question of developing the mind and working of the black races in Africa.

The PRESIDENT formally seconded the resolution, which was unanimously adopted.

THE BRITISH COTTON-GROWING ASSOCIATION.

Baron CANTONI said he did not think they ought to pass to other matters without expressing their admiration, especially that of the continental Delegates, of the British Cotton-Growing Association. We greatly admire, he said, the energy with which Lancashire, followed by people in other parts of England, has faced this question of finding new fields of cotton cultivation. The manner in which operatives and employers have co-operated in this work is an example to the world. I move that we express our admiration of the work of the British Cotton-Growing Association.

Herr GROSS seconded the resolution, which was adopted.

Mr. HUTTON, in reply, said in this matter England is following the good example set by Germany. We may have gone a little bit further, possibly, because we had more funds at our disposal. We value very much indeed the scientific information which our friends in Germany have sent us from time to time. On behalf of my Association, I desire to say that any information we have is at the disposal of the whole world. If there is any point of detail on which any of the gentlemen connected with the continental cotton-growing movement would like information, we will gladly give it them. We know they are quite willing to let us have the benefit of their experience.

THE ENGLISH DELEGATE ON THE EXECUTIVE COMMITTEE.

The PRESIDENT announced, amid applause, that he had been appointed Chairman of the International Committee. He remarked that he greatly appreciated the honour that had been conferred upon him, and assured the Delegates that he would discharge the duties of the office to the best of his ability. His appointment rendered it necessary to elect another English representative on the Executive Committee.

Mr. J. B. TATTERSALL, on behalf of the English section of the Congress, moved the appointment of Mr. Henry Higson, Chairman of the North and North-East Lancashire Spinners' and Manufacturers' Association, subject to that Association joining the International Federation.

The resolution having been adopted,

Mr. HIGSON, in reply, said during the two last Congresses, the eyes of the world had been directed to their conduct, and they had shown what were the ambitions and desires of the users of cotton.

THE NEXT CONGRESS.

The PRESIDENT announced that the Committee had unanimously decided to recommend that the next Congress should be held in Germany, which country came next to England in regard to the number of spindles and looms, so far as Europe was concerned.

The recommendation was unanimously adopted.

Herr GROSS: I am deeply gratified with the kind reception of my invitation. I can assure you that you will be received in Germany with the same warm welcome we have received here, although I doubt whether we can offer you the same attractions of a beautiful and interesting country which we have had an opportunity to enjoy here. In any case I can assure you of the heartiest welcome, and I beg to thank you once more for accepting my invitation to hold the next Congress of the Federation in Germany.

THE RESOLUTIONS.

The following Resolutions, dealing with various matters which had been discussed by the Congress, were then adopted :—

BALING AND MARKING OF AMERICAN COTTON.

Moved by the PRESIDENT, seconded by Herr Syz :—

“That this International Congress of representatives of Master Cotton Spinners’ and Manufacturers’ Associations is of opinion that the baling and marking of American cotton is at present performed in a very unsatisfactory manner, thereby entailing serious losses on the users of such cotton. It, therefore, urges the International Committee to take the question into immediate consideration with a view to united action being taken to remedy the grievance complained of.”

SPECULATION IN FUTURES.

Moved by the PRESIDENT, seconded by Mr. J. B. TATTERSALL :—

“That in the opinion of this Congress the regulations of the Alexandria Produce Association for the buying of futures could advantageously be amended, and that the Association be respectfully invited to consider the following suggestions, namely, that it would greatly improve the general dealing in Egyptian cotton, and make it much more difficult for gamblers or speculators to corner the market, if (1) ‘fully fair’ Egyptian cotton, (2) Upper Egyptian with proper allowance, (3) pressed bales of both qualities were all tenderable in addition to the present accepted qualities. That copies of this resolution be forwarded to the Right Hon. A. J. Balfour, M.P., Prime Minister, the Right Hon. the Earl of Cromer, British Minister in Egypt, and Sir W. H. Houldsworth, Bart., M.P., Chairman of the Parliamentary Commercial Committee of the House of Commons.”

DAMP IN COTTON.

Moved by the PRESIDENT, seconded by Herr GROSS :—

“That this second International Congress of Master Cotton Spinners’ and Manufacturers’ Associations, being strongly impressed by the reports on the subject of damp in cotton, and considering it an important source of grievance equal to the other complaints brought forward on the previous days’ sittings of the Congress in respect to bad baling, marking, and other matters, urges strongly on the International Committee to take steps for united action on the part of the prominent Cotton Associations and the representatives of Cotton Spinners’ and Manufacturers’ Associations, so to alter or amend the rules and by-laws of such cotton associations for the purpose of establishing a basis more equitable as between buyer and seller.”

VOTE OF THANKS.

Herr SVZ moved the following resolution, which was seconded by Mr. DERBYSHIRE and carried:—

“ That the best thanks of the Congress be accorded to—

The President of the Congress: C. W. Macara.

The Chairmen of the 2nd, 3rd, and 4th days:—

Arthur Kuffler.

Baron Costanzo Cantoni.

Jean de Hemptinne.

The Secretaries of the Congress.

“ To the following gentlemen for contributing papers:—

A. Kuffler, H. W. Macalister, F. Gross, J. R. Byrom, T. Roberts, F. Roy, S. S. Dale, J. A. Hutton, R. A. de Monchy, C. Berger, J. le Blan, H. P. Taveira, A. Ribeiro.

“ Also that the best thanks of the Congress, for invaluable co-operation in promoting its great success, be accorded to—

The Right Honourable the Lord Mayor (Sir Thomas Thornhill Shann) and the Corporation of the City of Manchester.

The Right Honourable the Lord Mayor (John Lea) and the Corporation of the City of Liverpool.

The Right Worshipful the Mayor (Joseph Brodie) and the Corporation of Blackpool.

The Right Worshipful the Mayor (Edwin Trounson) and the Corporation of Southport.

The Federation of Master Cotton Spinners' Associations.

J. K. Bythell and the Directors of the Manchester Ship Canal.

J. R. Byrom and the Directors of the Manchester Cotton Association.

P. Murray Hunter and the Directors of the Liverpool Cotton Association.

Sir James Hoy and the Committee of the School of Technology, Manchester.

The Officials of the Manchester and Liverpool Town Halls.

The Directors of the Royal Exchange.

The Directors of the Athenæum.

The Reception Committee.

The Social Committee,

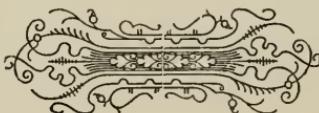
and to all those who have in any way assisted in connection with the Congress.”

A SOUVENIR.

The PRESIDENT reported that at the Meeting of the International Committee, in Brussels, last April, it was agreed that a Souvenir of this Congress should be prepared. That had been done, and each Delegate would receive two copies.

THE DELEGATES PHOTOGRAPHED.

This concluded the business of the Congress, but before the Delegates separated they were photographed, at the request of the Lord Mayor, in the room in which their deliberations had taken place.



SECOND INTERNATIONAL CONGRESS OF DELEGATED
 REPRESENTATIVES OF MASTER COTTON
 SPINNERS' AND MANUFACTURERS' ASSOCIA-
 TIONS, HELD ON JUNE 5TH, 6TH, 7TH AND 9TH AT THE
 TOWN HALL, MANCHESTER, AND ON JUNE 8TH
 AT THE TOWN HALL, LIVERPOOL.

MONDAY, JUNE 5TH.

- 9-30. Welcome by the Lord Mayor of Manchester.
- 10-0. Opening of the Congress.
 - The President's Address (Mr. C. W. MACARA).
 - Report of the Committee.
 - Financial Statement.
 - Appointment of Committee.
 - Constitution and Rules.
- 1-0. Luncheon given by the Directors of the Manchester Ship Canal Company, and of the Manchester Cotton Association.
- 2-30. Visit to the Manchester Ship Canal.
- 7-30. Reception and Conversazione by the Lord Mayor and Corporation of Manchester.

TUESDAY, JUNE 6TH.

- 9-30. Chairman's Address (Herr ARTHUR KUFFLER).
 - Organisation.
 - Secretaryship (Appointment of Joint Secretary).
 - Levy.
- 1-30. Visit to the Manchester School of Technology and to the Royal Exchange.
- 3-0. "The Regulation of Cotton Purchase."
- 7-15. Banquet given by the Lord Mayor and Corporation of Manchester.

WEDNESDAY, JUNE 7TH.

- 9-30. Chairman's Address (Baron COSTANZO CANTONI).
 - "Damp in Cotton."
- 1-30. Visit to Blackpool.
 - Dinner given by the Mayor and Corporation of Blackpool.

THURSDAY, JUNE 8TH.

- 9-0. Visit to Liverpool.
- 10-0. Welcome by the Lord Mayor of Liverpool.
 - Chairman's Address (Monsieur JEAN DE HEMPTINNE).
 - "The Metric System of Weights and Measures."
- 1-0. Luncheon given by the Liverpool Cotton Association.
- 3-10. Visit to Southport.
 - Dinner given by the Mayor and Corporation of Southport.

FRIDAY, JUNE 9TH.

- 9-80. The President, Mr. C. W. MACARA, in the Chair.
 - "Cotton Growing."
- 1-0. Luncheon given by the Federation of Master Cotton Spinners' Associations.



RECEPTION COMMITTEE.

Chairman: E. TOOTAL BROADHURST, Tootal Broadhurst Lee Co., Ltd.

Honorary Secretary: FRANK WHITWORTH, St. James' Square.

SAMUEL ARMITAGE, Sir E. Armitage & Sons, Ltd.

JOHN R. BARLOW, Barlow & Jones, Ltd.

HENRY BELL, J. & A. Leigh, Ltd., Preston.

W. CARNELLEY, Chairman of Rylands & Sons, Ltd.

W. OSWALD CARVER, Hollins Mill Co.

NEVILLE CLEGG, Vice-Chairman of The Calico Printers' Association, Ltd.

ALFRED CREWDSON, Horrockses, Crewdson & Co., Ltd.

CYRIL DEWHURST, G. & R. Dewhurst, Ltd.

A. H. DIXON, Managing Director of The Fine Cotton Spinners' and
Doublers' Association, Ltd.

J. P. DIXON, Baynes & Dixon.

JOHN EMERY, Howard Street Mills, Stockport.

ALFRED EMMOTT, M.P., Emmotts & Wallshaw, Ltd.

TOM GARNETT, Thos. Garnett & Sons, Clitheroe.

J. H. GILLET, John H. Gillet & Sons, Ltd., Chorley.

HENRY P. GREG, Ashton Bros. & Co., Ltd.

THOMAS HALLAM, Delamere Mills, Ashton-under-Lyne.

WILKINSON HARTLEY, Nelson.

G. C. HAWORTH, Rd. Haworth & Co., Ltd.

SIR W. H. HOULDsworth, BART., M.P., Chairman of The Fine Cotton
Spinners and Doublers' Association, Ltd.

E. L. HOYLE, Joshua Hoyle & Sons, Ltd

R. H. JACKSON, Primrose Bank Mill, Oldham.

Sir ALFRED L. JONES, K.C.M.G., President of the British Cotton-
Growing Association.

WM. C. JONES, Jones Bros., Ltd.

JAMES KENYON, James Kenyon & Son, Bury.

W. H. KILlick, Nixon & Killick, Chorley.

Sir JOSEPH LEIGH, M.P., Portwood Spinning Co., Ltd.

Reception Committee—*Continued.*

W.M. C. MACARA, Henry Bannerman & Sons, Ltd.

W. H. MORRIS, Cotton Hall Mill, Darwen.

JAMES NUTTALL, T. Nuttall & Sons, Farnworth.

J. PRESTWICH, Busk Mills, Oldham.

F. REYNER, Reyners Ltd., Ashton-under-Lyne.

GEORGE WOOD RHODES, Thomas Rhodes, Ltd.

T. W. SHAW, President of the Bolton Master Cotton Spinners' Association.

JOHN L. TATTERSALL, R. H. Buckley & Sons, Ltd., Mossley.

R. WORSWICK, Hall Carr Mills, Rawtenstall.

SOCIAL COMMITTEE.

RICHD. J. ALLEN

J. H. LESTER

C. A. BRUNNSCHWEILER

A. NICHOLSON

A. BROOKES

A. Y. SCHOLFIELD

A. CROMPTON

L. TOUSSAINT

W. LEES

T. VEEVERS



APPENDIX.

THE METRIC SYSTEM.

PAPER BY SAMUEL S. DALE (UNITED STATES).

Plain words are best. That you may not misunderstand the few plain words that I have prepared, I desire to express the belief that if I were an inhabitant of France or Germany, as I am of America, I would advocate the continental position.

We have studied not only our own standards, but also those of Europe, and I will try to make a brief statement of the line of argument that has proved conclusive to most of us. I shall confine myself to textile manufacturing, though it must not be forgotten that important as that industry is, it involves but a part of this complex and imperfectly understood question.

Briefly stated, the claims for the metric system are that its decimal divisions, correlation of units and systematic nomenclature, make it the best, if not a perfect system, and that it is sure to become eventually the single standard of the world. These claims are assumed to be true, and for more than a century have been repeated with so much emphasis and show of authority as to convince most people of their soundness. It is this assumption that forms the basis of the metric fallacy. It began in 1790 when a party of eminent scientists, not one of whom is known ever to have spun a pound of yarn or woven a yard of cloth, were selected to construct a new system of weights and measures for France and the rest of the world. The people who were to use the system had no voice in its construction, and it was imposed on them with the dictum that it was perfect and sure to become universal. That century-old assumption has been echoed in one of the papers read here to-day, but neither in that paper nor in the volumes of pro-metric arguments during the last hundred years can any attempt to support these assumptions by proof be found.

Now I want to ask you to rid your minds of all predilection in favour of the metric system, and consider the question of textile weights and measures with the determination to accept nothing without proof, and to accept anything with proof; to keep the words of Galileo in mind: "In questions of science the opinion of a thousand is not worth the humble reasoning of a single individual."

In stating the reasons why the metric system should not be introduced into English-speaking countries, I feel like the Irishman who had forty reasons for not buying a pool ticket on the races. The first one was that he didn't have the money. Our first objection to the introduction of the metric system is that its complete adoption is impossible.

First let us form as clear an idea as possible of what the proposition to change their textile weights and measures means to English-speaking people. Three-quarters of the world's cotton crop is sold from the plantations by the English pound, and practically all of it is sold in the markets by the same standard. This pound is the basis of our textile weights, and thus before we reach the mill it will be neces-

sary to revolutionise the methods of business among 15,000,000 people in a cotton belt one-sixth the size of all Europe. This revolution will include all standards for the yield from the soil, ginning, freight rates, and values among the individuals and corporations connected directly or indirectly with the cotton business, planters, ginners, railway employés, buyers, brokers, cotton exchanges, merchants, speculators and the general public.

In the mill it means a change in the ideas of millions of hard-working and uneducated people regarding the length, area and weight of textile materials; in the standards by which many of the machines are constructed and operated; in the mill records, financial and technical, private and public, written and printed; in all wage lists based on weight or measure.

Leaving the mill, we find that this change extends to manufactured or finished materials; to all public quotations; all individual ideas of value, of cost and selling prices among manufacturers, wholesalers, retailers and consumers. In a word, the metric proposition involves a complete re-arrangement of the entire industrial and commercial organisation from the planter to the wearer of the garment, among the 500,000,000 people inhabiting the vast area included in the British Empire and the United States. A statement of the task stamps it as everlasting impossible.

"But," the metricites may say, "the change is much easier than you think. The metric system is perfect and wins its own way. See how easily we changed in continental Europe, and how the metric system has conquered the outside world." Well, let's see about this. No system of textile weights and measures is in use until a system of yarn numbering is based on it, and at this moment, one hundred and twelve years after Robespierre issued his decree establishing the metric system, the textile weights and measures of continental Europe are in a state of indescribable confusion with thirty-five systems of numbering yarn in use besides the English and the metric. The metric failure is apparent in practically every French or German book on textile calculations, in every French or German textile journal. And this failure has followed a systematic and long-continued attempt to change continental weights and measures by drastic legislation for more than a century.

With the exception of the revolt from the metric decree of 1810, which established the French cotton system on the basis of the half-kilogramme in 1819, the continental cotton industry has been conducted on the English basis of yarn numbering, and in order to learn the lessons of continental experience it will be necessary to survey other branches of textile manufacturing. The general confusion in France is thus described by a French textile manufacturer, Paul Lamoitier, of Roubaix:—

"We are as much in the anarchy of weights and measures for the textile industry as at the time of the Revolution, for we have the denier of Montpellier and of Milan for silk, with the aune as a unit of length. . . . After having established the metric system, is it not truly ridiculous that more than 110 years later we should be still using the English yard, the old or French pound, the denier of Montpellier or of Milan, the ancient aune, the many different skeins, etc.?"

In the wool industry the metric system of yarn counts has made some progress, doubtless because of the large number of standards in use for wool and the consequently greater need for uniformity. It is easier to introduce a new system where there are fifty old ones than where there is but one. In the former case, fifty standards make unification imperative; in the latter case, a single standard makes another impossible. In spite, however, of a century of drastic law, and in spite of the variety of old woollen standards in France which make unification necessary, we find at this moment in use in France eight old systems of numbering wool yarn in addition to the metric and the English. One witness of the condition, M. Désiré Chedville, Paris Metric Yarn Congress, 1900, says:

"We hope no new burdens will be imposed on the industry, but if we look the facts in the face we will find that notwithstanding the decree of 1810, and in spite of the serious efforts put forth by the industrial societies of many districts, we still have the ancient units of weight and measure, and we scarcely comprehend each other when we talk of spinning at Rheims, Roubaix, Elboeuf, Sédan or Vienne, where the skeins still measure 1420, 710, 3600 or 1500 metres."

Perhaps nowhere has the metric failure been more complete than in the silk industry. This is because silk manufacturing was more highly developed there than other branches of the textile industry when the metric system was introduced in 1793, and this fact is specially significant to us now because of the extent and importance of the cotton industry of to-day.

The silk industry was so firmly established on the denier-aune basis that French legislators shrank from the task of changing its standards. It was omitted from the decree of 1810, and the first attempt to bring the silk standards to a metric basis was in 1866, when a law was passed providing that silk should be numbered by grammes per 500 metres. The failure of this law is thus stated by two French delegates at the Paris Metric Congress of 1900:—

M. Chamonard, Lyon, France: "I will add in two words that the length of the 500-metre is so contrary to established usage that it has never been used. The law providing it has rested a dead letter since its passage twenty-five years ago."

M. Jules Persoz, Paris: "The size of silk is expressed in different ways in the different countries. In France, a law of June 13th, 1866, provides that the number of silk shall indicate the weight in grammes of a skein of 500 metres long. Although legal, this standard has not been adopted by the trade."

That law of 1866 is the law of France to-day. Its failure became apparent at once, and the Vienna Metric Congress of 1873 resolved that all yarn, including silk, should be numbered by the fixed weight system of 1000-metre lengths per kilogramme. This accomplished nothing, and the next year the Brussels Congress of 1874 adopted a fixed length, 50 milligramme-units per 500 metres. This was endorsed by the Turin Congress of 1875, and the Paris Congress of 1878, but was never adopted by the silk trade. Twenty-two years later, in 1900, another Metric Congress at Paris abandoned all previous silk standards and adopted the denier system, which, reduced to metric equivalents,

is based on the grammes per 9000 metres. The Metric Congress of 1900 thus confessed failure, adopted the denier basis and tried to save its face by resolving that this system, based on 9, was metric and decimal. The absurdity of this resolution was quickly recognised, and in less than three years, the Permanent Committee of that Congress turned the system upside down, and in 1902 adopted a fixed weight of 1000-metre per kilogramme base. Soon after this, as if to emphasise the humour of the situation, the Japanese Government solemnly informed the United States Department that Japan has accepted the grammé-9000-metre standard (old denier) which had been adopted by the Paris Congress of 1900. And during all this time while law-makers and metric congresses were demonstrating their lack of control over silk weights and measures, the silk workers and the silk trade continued to do business on the denier-aune basis. This story of the failure to change the established silk standards shows just what will result from any attempt by law-makers or trade congresses to change the 840-yard per pound cotton system in use throughout the world.

In the linen, hemp and jute industries the English yard-pound basis is the world's standard. In France that standard is used without interference and in plain defiance of the decree of 1810. One witness:—

M. Louis Guerin, Lille, Paris Metric Congress, 1900: "It is practically impossible for us to sell linen by any other than the English standard. . . . If the law of 1810, providing for the metric standard, is enforced we shall be the first to complain of that which we have asked for."

In addition to the use of eleven systems of numbering yarn in France, the French weaver continues to use the French inch for gauging the picks per inch. In view of these facts there can be no doubt of the complete failure of the metric system in the French textile industry.

In Germany and Austria a similar condition exists. In these two countries alone there are, besides the English and metric systems, twenty methods of numbering yarn, while a medley of old inches survives for gauging the set of warp and filling. Two witnesses:—

"Oesterreich's Wollen- und Leinen-Industrie," May 1, 1905: "In Austria the Vienna inch and centimetre are used for measuring the width of woven cloths. The set of warps in the loom is usually based on the Vienna inch; in some mills in Vorarlberg, on the French inch. All this confusion, as well as that in which the numbering of yarn is involved, could be remedied by the use of the metric system, but unfortunately all efforts in this direction by prominent associations have been without result."

Ernst Frank, Mistek, Austria. "Die Kalkulation von Waren aus Baumwollgarn," September, 1904: "I have greatly simplified the calculations of warp and filling yarn by tables of constants, by which the width of the cloth is multiplied to give the weight in English pounds or kilogrammes for 100 metres of cloth. These tables are compiled for widths by the Vienna inch, Paris inch or centimetre. . . . The English system of yarn numbering, which is used in the greater part of Europe, has been adopted for this work, the French and metric systems being given only for the purpose of comparison."

Testimony to the same effect could be given indefinitely. We find French and German textile literature, almost without exception, in-

volved in an indescribable confusion of weights and measures, and have concluded that the actual condition must be much worse, because it is the aim of every technical writer to simplify his explanation as much as possible.

The only explanation from the Continent is that England is responsible. "If England would only change her system we on the Continent would have a metric uniformity." But would they? Is the use of the English system responsible for the survival of thirty-five continental systems of numbering yarn based on non-English and non-metric units? Is England to blame for the medley of inches, ells and other standards in every continental country?

Now all this continental confusion prompts a question to which I invite your careful attention. If the Leipzig inch still persists in Saxony, the Vienna inch in Austria, the French inch in France, and innumerable other old standards of measure and weight all over the Continent, if the English system cannot be driven out of Germany, how can the entire English system, including yard, inch, pound, ounce, dram, grain, and yarn counts, be eradicated from every English-speaking country where it is now the single standard?

This Continental failure is not surprising. A person having learned to think or work by certain standards of length or weight will never learn to think and work as well by any other. The attempt to establish the metric system came in conflict not only with the inveterate habits of the individual, but with those habits immensely strengthened by being common to the whole community. Law is powerless to alter these habits. The individual will is impotent. There is not a textile mill owner on earth who can change the standards of his own mill. He can sell the plant or tear it down, discharge his employés and hire new ones, change the structure of his fabrics, but he cannot change the mill standards of length, area and weight on which the mill records are based and by which the mill operatives think.

Compare the conditions under which failure has been so complete on the Continent with those under which the attempt must be made in English-speaking countries. Then, a rude industry of the household with not a power-spindle in operation at the start, plain, coarse fabrics, weights and measures of little importance, a diversity of standards causing confusion, a small area and a stationary population. Now, a complex factory system with 75,000,000 power-spindles in operation, complicated fabrics, accurate weighing and measuring essential in every process, a practical unification of standards on the yard-pound basis, a vast area and a rapidly increasing population. Then, everything was favourable to success; now, everything is adverse.

We are as much the slaves of habit as the French or the Germans; we dislike as much the changing to new ways of measuring and calculating. We pretend to no greater ability. We cannot succeed with everything adverse to success when they have failed with everything favourable. This is the conclusion of reason and common sense.

Although the abolition of the English system is impossible, the metric system may be forced into English-speaking countries, providing the right law, not too drastic to arouse the people, be enacted and executed. What then? The chaos of multiple standards. We do not have to imagine it for we find a practical illustration in the present textile practice of continental Europe. I will not presume to

tell you about your own mills, but will let a few unimpeachable witnesses from the Continent describe the continental chaos themselves:—

Lamoitier, "Traité de Tissage": "We shall further on study the counts of silk, cotton, linen, etc. We regret extremely these anomalies which obstruct business, lead to regrettable errors and wantonly complicate all calculations."

Frowein, "Kalkulator für Artikel der Textilbranche," Barmen, Germany: "In an estimate of the cost of a cotton tape the reed is gauged by the number of dents per *French line*, the yarn counts in both warp and filling are *English*, based on the 840-yard standard. The picks of filling are given as so many per *French inch*. The weight of the warp yarn is calculated in *metric grammes* from the *English counts*, and extended at a price in *marks* per *English pound*. The length of the filling yarn is calculated per 100 *metres* of cloth from the picks per *French inch*, and the width in *French lines*. The weight of the filling in *grammes* is then calculated from the *English* yarn count, and the length in *metres*. This weight in *grammes* is then extended at a price in *marks* per *English pound*."

This state of chaos is what always results from a mixture of two systems of measurement. On the Continent it is due to the fact that the old and the English standards are different from the commercial standards of the people; and if the metric system should become established in the textile industry of Great Britain and America, to the extent that the English and old standards are used on the Continent, we should be thrown into a similar confusion, only worse, because there would be more people, more work involved.

We now have two points established, the impossibility of abolishing the English system, and the chaos that would result from a mixture of English and metric standards. There remains an examination of the merits and demerits of the two systems. I shall be brief, because the theoretical advantages of a system we cannot have as a single standard, and ought not to have as part of a multiple standard, are of no importance, no matter how great. The chief merit of any system of weights and measures is the extent to which it is used. Outside of France the English cotton yarn system is universal. The world has adopted the English system and deprived it of its local character. The English cotton count is German, Russian, Spanish, Chinese, Japanese and American. A proposition to change it evokes protests as violent at Berlin as at London or Washington. Three years ago, when the German tariff was being framed, Kommerzienrat Münch-Ferber declared before a committee of the Reichstag that to abandon the English system would be to throw the German weaving industry into *heillose Verwirrung*.

Here is a card made in Germany for the German trade. On it are fourteen samples of cotton yarn numbered to indicate the sizes, and it bears the inscription "Die Nummernbezeichnung ist die englische." The standard of this card is the cotton standard of every country on earth except France, where a system based on five instead of ten is now used, enduring evidence of the revolt of the French people against the decimal despotism of 1793.

Outside of France a number applied to cotton yarn indicates the number of 840-yard lengths per pound. 40's is the same in Shanghai,

Yokohama, Bombay, Leipzig, Barcelona, Milan, Moscow, Manila, Fall River and Manchester. No confusion, no chance of error or fraud.

Germany is not the only country in which the English system has received the official as well as the popular sanction. It is the basis of the cotton yarn tariff schedules of Austria and Spain, while the triumph of popular usage over official regulation in Italy was thus submitted by Baron Cantoni, at Paris, in 1900:—

“We find ourselves in the strange position that all our commerce is based on the English system, while the Government has adopted the metric system for commercial treaties, statistics and the customs tariff.”

The English cotton system is supreme in the Orient. The textile schedules of the Japanese and Chinese tariffs are based on it, and we find the Chinese textile schedules translated into German and published with the English standards for the guidance of German manufacturers and exporters.

The English system of weights and measures is not only the world's standard for cotton, but it is the leading standard in other industries. This, I know, is contrary to the metric assumption, but the facts prove it. We often hear of the many countries and the many hundreds of millions of people who have adopted the metric system, but these statements have little foundation in fact. The governments of many small States have adopted it for official business, but this official use has continued for generations with practically no effect on the customs of the people. I cannot now discuss this point in detail without going outside of the textile industry, but will content myself with citing the case of the Philippines, where it was made the official system in 1855. To-day it is nothing more. The Philippine people still use the old Spanish standards. Take the case of Manila hemp, which forms three-fourths of the Philippine exports. All this fibre is bought and sold in the Philippines by the old Spanish *picul* and *arroba*. The weight is reduced to kilogrammes for the purpose of assessing export duties in the custom houses, and then 95 per cent. of it is carried to Great Britain and the United States to be sold and spun by the English yard and pound. So far as I have been able to learn, the Philippine case is typical of the conditions in all the so-called metric countries outside of continental Europe. In the textile industry the metric system is used practically not at all, and outside of that industry it is a bureaucratic obstruction to business.

Judged by the highest standard of excellence, the extent to which it is used, the English system stands without a rival.

The chief claim for the metric system is that being decimal it facilitates calculations. Decimals are not confined to the metric system. With the English system, decimals can be used if wanted; with the metric system they must be used whether wanted or not. The metric system of yarn counts based on 1000 metres per kilogramme facilitates the calculation of any one of the three factors, length, weight and yarn count, from the other two. This calculation by the English system is more involved because the yarn count is based on 840 yards per pound, while the yard is divided into 36 inches and the pound into 16 ounces, or 7000 grains. To state fairly this difference, which involves the chief if not the only advantage of the metric system over the English, it is necessary to call attention to certain useful relations of the English

standards, which reduce the apparent difference in this respect. Eight hundred and forty is divisible by every digit except 9. Being divisible by 7, we are able to find the count by dividing 1000 by the weight of 120 yards, or 100 by the weight of 12 yards in grammes. Multiplying the English count by $5\frac{1}{4}$ gives a decimal count based on 100 yards per ounce, which facilitates the calculations of the ounces per yard. Dividing the threads per inch in a woven fabric by the weight in grains of $\frac{1}{300}$ of a square yard gives the English cotton number.

These relations of the English units still leave an advantage with the metric system for this class of calculations, but they reduce that advantage to very small proportions. For all other textile calculations there is little to choose between the English and metric systems. If any one thinks the metric system offers an advantage, let him make a series of calculations by both systems and compare the results. Such a course of experiments, and a careful study of French and German works on textile calculations, has convinced me that outside the advantage already mentioned, and which is a mere bagatelle, there is little to choose between the English and metric systems for textile calculations.

As for the names of the metric units they are impossible. They were condemned by the men who invented them, but were forced on the French people by the will of Robespierre and his associates. No one uses them without change; no one can. They are abbreviated, altered or abandoned for others. They are long, cumbersome and so near alike as to be easily confounded with each other.

Exclusively decimal divisions of units are equally impossible. Successive halving is the natural division of the yard, pound or other units for many purposes. It gives us halves, quarters, eighths and sixteenths of a yard or pound. A slight modification of the process of halving gives us thirds, sixths and ninths. The human mind as now constituted will never abandon these easy subdivisions for decimals which are the most difficult divisions of all to make, and by which it is impossible to express a third, sixth, seventh or ninth. No matter what the basic unit may be, decimals fail to give standards that, judging by all human history, supply a natural want.

A glaring defect of the metric system is the lack of a unit approximating the English inch. The fact that the Vienna, French, Leipzig, Berlin, Brabant and English inches are approximately the same is not the result of blind chance. Note how well such a length is suited to the requirements of the textile industry. For gauging the set of textile fabrics the centimetre is too short, the decimetre is too long, while the inch answers this purpose perfectly. The French customs tariff specifies five centimetres for gauging the set, while the French weaver clings to the French inch and its binary divisions. Let me summon a French, a German and an Austrian witness to state this defect of the metric standard:—

Dantzer, "Traité de Tissage," Lille: "When it is desired to determine the set with a fair degree of accuracy the length of several centimetres, five or six for example, is used."

Donat, "Methodik der Bindungslehre," Reichenberg: "The threads in warp and filling are gauged by the number per decimetre. The use of the centimetre is unsafe, because from one-half to one thread, even more in silk goods, may be easily overlooked."

Frowein, "Kalkulator für Textilbranche": "The different widths of ribbon and tape often vary by one-quarter line, the millimetre being too long for this measurement. It is greatly to be regretted that we find here an obstacle to its use for expressing widths, and thus bringing it into use in commerce."

Hermann Dornig, "Die Materialbestimmungen," Greiz, Germany: "The set of a fabric is usually determined by the centimetre, but this is unsafe. The shortness of the centimetre makes a fraction of a thread an important factor. It is best to count the threads not only for one centimetre, but at least for five and when possible ten. The number is then divided by ten or five, respectively, to obtain the threads in one centimetre."

The general use of the half-kilogramme proves that the English pound, which it approximates, is a more convenient unit than the kilogramme. The ounce is preferable to the gramme for expressing weight of woven goods.

The greater convenience of the English units is not a reason for surprise. The English standards were selected by the worker for his work; the metric standards are the result of an arbitrary scheme devised without regard to the textile industry.

If this comparison is fair, you are asking us to adopt a system of weights and measures that is inferior to the English system, which we have and which, with our language and common law, is one of our fundamental institutions. We do not deny that the English system is imperfect, but it is the better of the two. Your metric proposition reminds me of a non-partisan reformer in my country who once went to a party boss and asked that appointments to public office be made irrespective of party service, adding that both parties, Republicans and Democrats, were a pack of rascals. "Yes," replied the boss, "that may be, but these are our rascals." And so the plain American people will answer to this metric proposition. Our English weights and measures may be imperfect, but they are ours.

This, my friends, is the line of reasoning that has led us to three conclusions: the impossibility of abolishing the English system, the chaos that would be caused by introducing the metric, and the superiority of the English. In a word, the metric system is both impossible and undesirable.

Like conclusions in other branches of industry are reflected in votes of many technical and industrial associations of the United States, among which may be mentioned: The National Association of Manufacturers, American Society of Mechanical Engineers, American Iron and Steel Association, National Association of Carriage Builders, National Association of Heating Engineers and Contractors, Engine Builders' Association of the United States, National Association of Builders, National Brick Manufacturers' Association, National Association of Machine Tool Builders, Furniture Association of America, National Metal Trades' Association, Association of Railway Master Mechanics, Master Car Builders' Association, American Society of Heating and Ventilating Engineers, Providence Society of Mechanical Engineers, and Society of Naval Architects and Marine Engineers.

Not the least in the list of those who have bowed to the logic of the anti-metric facts is the Committee on Coinage, Weights and Mea-

sures of our House of Representatives. Three years ago that Committee reported a compulsory metric Bill favourably to the House by a vote of 16 to 2. Three months ago all but one of the same Committee were opposed to almost identically the same compulsory measure.

If we are right, it does not follow that the efforts to unify the world's weights and measures must be abandoned. The use of weights and measures is extended by the industrial energy, skill and commercial ability of those who use them. The skill and artistic talent of the silk workers of Lyons have made the French denier-aune the silk standard of the world, and established the French line wherever ribbons are sold. The pre-eminence of Great Britain on the sea has made the British ton the standard for shipping wherever vessels float. The use of the English cotton yarn system by the spinners of every land is a result of the industry and shrewdness of men and women who have lived within sixty miles of this hall.

Peter the Great, working in an English shipyard two hundred years ago, was impressed with the skill of English ship builders and took back with him to Russia half-a-dozen carpenters to teach their trade to his people. As a result of that apparently trifling incident, the English inch is to-day either equal to or commensurable with all the linear standards of the Russian Empire.

These are examples of the natural forces of individual and collective habit by which weights and measures are established and extended.

If the weights and measures of mankind are ever brought to one common standard, it will be by such a process of evolution, and yet for more than a century the attempt has been made to unify weights and measures on a metric basis by opposing natural laws. Let us learn a lesson from that century of failure, and cut away from the old fallacy that the unification of weights and measures means necessarily the adoption of the metric system. Let us study the natural laws by which these standards are established and maintained. In this way only can we learn how individual and official efforts should be directed to hasten the day when "there shall be but one measure throughout all the earth."



STATUTES.

Object.

1—The purpose of this International Federation shall be to watch over and protect the common interests of the Industry, and to advise Associations of the action to be taken against any common danger.

2—The means to be employed are:—

- (1) The holding of Congresses of Delegates from the Associations in all countries becoming affiliated with the International Federation.
- (2) The Appointment of a Committee of Management, who shall:—
 - (a) Control the work and expend the monies of the Federation under the instruction of the Congress.
 - (b) Distribute information of practical value in carrying on and improving the conditions of the Cotton Trade.
 - (c) Assist in the formation, strengthening and assimilating of Associations in all Spinning and Manufacturing Centres of the Cotton Industry.
 - (d) Call together the Delegates to special Congresses when the need shall arise.
 - (e) Consult the Associations by correspondence, and distribute and collect voting papers from the Associations on any international movement in connection with the trade.
 - (f) Take any other action in the common interest of the Trade that may be decided upon by the Congress.

Membership.

3—All Associations of Cotton Spinners and Manufacturers are eligible for affiliation with the International Federation, subject to their acceptance by Committee and Congress.

Financial.

4—A Levy shall be paid by each Association according to its number of Spindles and Looms.

5—Spindles shall include Mule, Ring, Throstle and Doubling. Two Doubling Spindles to be equal to one Mule Spindle.

6—Each Association joining the Federation shall pay an Entrance Fee of $\frac{1}{100}$ of a penny per Spindle, and one farthing per Loom (one Loom to be equal to 25 Spindles). This Entrance Fee shall include the current year's levy.

7—For the year 1905, and each succeeding year until otherwise determined a Levy shall be made of $\frac{1}{200}$ of a penny per spindle and one-eighth of a penny per loom. Associations are liable for the coming year's levy unless they have handed in their resignation at least three months before the end of the current year. Resignation forfeits all right to any accumulated funds.

8—All Levies shall, after the year 1904, be due for payment before the end of September.

9—In case any Association shall fail to pay its Levy, or send Delegates to the Congress, the name of such Association shall be placed before the Congress to take what steps it may think fit.

Offices.

10—The Offices of the Federation shall be in Manchester. Any change in the headquarters must be by decision of the Annual Congress.

Bye-Laws for Committee.

11—The Committee of Management shall consist of one Delegate from each country affiliated to the International Federation, and the Committee, from its own members, shall appoint a Chairman, Vice-Chairman and two Honorary Treasurers of the Federation. Each country shall appoint its own Delegate. The country which the Chairman of the Committee of Management represents shall be entitled to another representative on the Committee.

12—For the Committee of Management, five shall form a quorum.

13—Each country shall have the right to appoint a substitute to attend the meetings of the Committee in the event of its representative being unable to attend. This substitute, in order to become conversant with the work of the Committee, may accompany the duly appointed representative to any meetings of Committee, if the Associations in his country so desire, but in the latter case his expenses will not be paid by the International Federation, nor has he power to vote, and it is not expected that he will take part in discussions at the meetings.

14—The Committee shall appoint its Secretary, or Secretaries, and other Assistants, Bankers, Auditors and Solicitors; and such appointments shall be confirmed annually or otherwise.

15—The Committee shall have power to appoint, from its own body, any of its members for the purpose of obtaining information, or undertaking preparatory work, in connection with any of the objects of the Federation. Such information or preparatory work to be reported upon periodically to the Committee through its Secretary.

16—Should a position as Officer or Member of the Committee become vacant by death or resignation, the Committee shall have power to fill such position, if an Officer, from its own body; if a Member of the Committee, from the Delegates from the country represented.

17—The Committee shall meet when it is desirable, but where possible the consultation shall be done by correspondence. When possible, at least four weeks' notice shall be given of any meeting of the Committee of Management.

18—On the request of one-fourth of the Members of the Committee (which always includes the Officers), the Chairman shall call a meeting.

Expenses of Members of Committee.

19—The Members of the Committee of Management, when attending meetings of the Committee, shall be allowed first-class fares and 40 francs per day for out-of-pocket expenses.

Bank Account.

20—The Bank Account shall be in the names of the Chairman of the Committee and the Secretary at headquarters, and all cheques shall be signed by the Chairman, or one of the Honorary Treasurers, and countersigned by one of the Secretaries.

21—The Bank Account shall not be overdrawn, and no expenditure or liability shall be incurred for which there are no funds in the Bank.

Close of Financial Year.

22—The financial year shall end 31st December.

Dissolution.

23—In case of dissolution the funds in hand shall be divided on the basis of the contributions made by the affiliated Associations.

Regulations for Congress.

24—The Annual Congress shall be in a different country each year.

25—When possible, at least four weeks' notice shall be given of any meeting of Congress.

26—The Associations in each country shall appoint Delegates to attend the Congresses. No restriction shall be placed on the number of Delegates any Association may send, but the voting power shall be as follows:—

One vote for each Million Spindles or part thereof.

One Vote for each 40,000 Looms or part thereof, but not more than Twenty Votes to be given by any one country.

Voting shall be by the showing of hands, but shall be by ballot if desired by twenty-five per cent. of those present empowered to vote.

27—Each Association shall, before the end of March, appoint its Delegates for the following Congress, and shall at once intimate to the Secretary the names, postal addresses, and cable addresses of such Delegates.

28—Fourteen days' notice shall, if possible, be given to the Secretary at headquarters of any change in the appointment of Delegates.

29—The expenses of Delegates shall be paid by the Association they represent, or by the Delegates themselves.

30—If a Delegate be unable to be present, he may be replaced by another representative of his Association. This representative, however, must present satisfactory credentials to the Committee.

31—Any Association wishing to bring a subject before the Annual Congress, or propose the alteration of a Rule, shall forward its resolution to the Secretary at headquarters before the end of March.

82—The member of the Committee of Management representing the country in which the Congress assembles shall preside over such Congress. The names of the Delegates shall be called over; after which the Chairman of the Committee of Management shall present a report to be followed by the reading of the Financial Statement.

83—The remaining proceedings shall be arranged by the Committee of Management, but shall be subject to alteration should the Congress desire.

84—Permission may be granted for the discussion of matters which do not comply with Rule 31, but no vote can be taken.

85—In order to expedite the discussions of the Congress, the introducer of any subject shall be allowed one hour. Subsequent speakers shall be allowed fifteen minutes, which the Chairman may at his discretion extend to thirty minutes.

86—Delegates may speak in English, French or German, but it is desirable that they use the English language in order to obviate, as far as possible, the necessity of translation.

87—No resolution in any Congress shall be voted upon except 75 per cent. of the Delegates empowered to vote are present, and no resolution shall be carried except by a majority of 75 per cent. of those voting.

88—No resolution shall be voted upon at the sitting in which it has been introduced (unless a 75 per cent. majority be in favour of such vote being taken), except for the appointment of Officers of the Congress and the fixing of the next place of the Congress.

89—The place of meeting for the next Congress shall be decided upon at the last meeting of a Congress.

Official Reporters.

40—Official Reporters shall be appointed to take a verbatim report of all proceedings, and submit a general report of the day's proceedings for the Committee's approval before giving it to the Press.

Visitors.

41—No strangers shall be allowed to attend the sittings of Congress, except they have a special written permit from the Committee.

Voting by Correspondence.

42—Voting by correspondence with the Associations shall be by Spindles (one Loom equalling 25 Spindles, and two Doubling Spindles

to be equal to one Mule Spindle). The ratio of voting power shall be as per Rule 26.

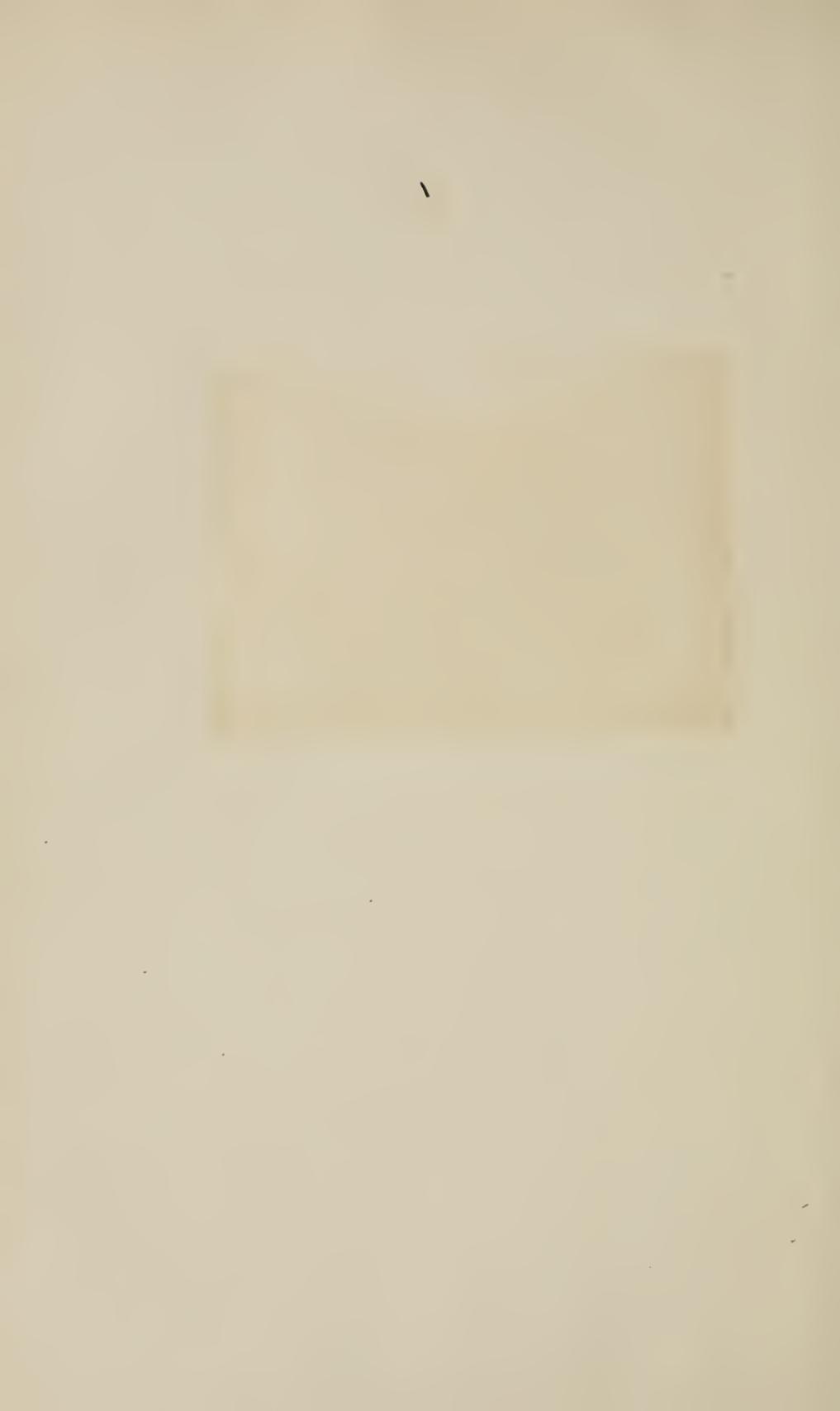
Alteration of Rules.

43—These Rules may be added to, varied, or rescinded at any annual Congress, but notice of any proposed alteration shall be sent by the Secretary with the notice convening the Annual Congress.

Local Committees.

44—Local Committees may be formed in each country for the purpose of discussing questions of International interest. The meeting forming such Local Committee shall be convened by the various representatives on the Committee of Management.





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